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INSIDE DOPE

by GEORGE F. TAUBENECK

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Story of the Week

"I sure have a problem on my hands," grumbled Mac. "My wife's relatives and friends are constantly eating and sleeping at our house. It's like a free hotel."

"Yeah," sympathized Jack, "I used to have that problem, too."

"What did you do about it?' wondered Mac.

"Nothing to it, really," rejoined Jack. "I just borrowed money from my wife's rich relatives, and lent a few sawbucks to my own poor relations.

"Haven't seen any of 'em since!"

Imagination is the ability to observe accurately, reason logically, associate suggestively, select appropriately, omit mercilessly, project clearly and objectively, and to imply and deploy courageously.

Daring Humor (1910 A.D.)

Susan was to be married the following day, so a great deal of hustle and bustle was going on around the house. Her grandmother was working in the kitchen, trimming pastries and concocting other luscious-looking snacks for the wedding reception.

Her mother, with pins in her mouth, was remaking the ancestral wedding gown.

In the midst of all this activity Susan, followed by her panting male, sauntered into the kitchen and walked over to the table where her grandmother was absorbed in the practice of ancient culinary arts.

As the bride-to-be leaned over the table to examine the succulent dainties her grandmother was preparing, the groom-to-be teasingly kissed the back of the pretty girl's neck.

"Tut, tut," cautioned Grandmother, "let's not have any nibbling at the frosting before the cake's on the table!"

Let's Be Smart

Our neighbor and friend, J. R. Millar, who is president of National Automotive Fibres, Inc., insists that we should give no more "loans" to Great Britain or any other country that maintains a 30-hour work week. Mr. Millar—who is a self-made man in the best American tradition—has something there.

"Any nation to which we loan money—and I refer particularly to England at the moment—should establish at least a 45-hour work week," Mr. Millar declares. He goes further:

"To encourage Europeans to work a 45-hour work week they should have a coupon system by which these workers will receive, in addition to their time and a half pay for extra time worked, coupons that will enable them to receive certain foodstuffs, such as chicken, meat, flour, sugar, butter, without the payment of anything other than their coupons.

"The taxes the government will receive from the overtime so worked should be earmarked to establish a fund which will repay our loans. Without work they will get no production, and without greatly increasing their present production they will never get back on their feet."

Mr. Millar is on the right track.

Americans shouldn't have to work one or two days a week to support idling Europeans. But before European labor can be expected to increase its output, incentives must be provided.

J. R. Millar, a true grass-roots American individualist, has suggested an answer to this dilemma.

Horoscope for Monday

An eagle-eyed editorial assistant, who reads a lot of publications for

(Concluded on Page 12, Column 1)

'Refrigerators, Freezers Not Luxuries' Tax Hearing Told; See Delay In Bill

WASHINGTON, D. C.—The proposed excise tax increase to 25% was hit hard in testimony this week before the House Ways & Means Committee by representatives of refrigerator, home freezer, and appliance manufacturers.

The long hearings on the new tax bill, plus a seeming reluctance on the part of the committee to push very hard for the treasury proposals, have set back the schedule on the tax bill. Chairman Doughton has ordered a long Easter recess and a period of "review" of the testimony. Some observers think that this might push final action on new taxes back into late summer or early fall.

In the testimony the point was argued by Reese Mills, chairman of the Nema tax committee, that none of the appliance products made by Nema members could be considered luxuries.

Refrigerators and freezers are needed to preserve food, hot water heaters are needed for proper sanitation, and heating pads are prescribed by doctors, the congressmen were told.

Mills and other witnesses pointed out that consumption of scarce materials can be better controlled through direct limitation orders and consumer credit curbs, and that high excise taxes tend to ration goods according to ability to pay rather than according to need.

Mills urged that all manufacturers' excise be repealed and an emergency retail sales tax be levied instead on all items manufactured for household use.

J. H. Overmyer of Revco, Inc. made the presentation for the Rema home freezer section, prepared under the direction of J. W. Krall of Tyler Fixture Corp., chairman of the section, who was unable to attend the hearings because of illness.

The Rema freezer group made the point that food preservation is just as important to defense as food production. It was also pointed out that in addition to conserving food costs, use of home freezers cut food costs for American families.

Furthermore, it was stated that "in the event of an atomic attack frozen meals stored in food freezers located in rural areas would adequately provide for refugees from devastated areas."

Thomas F. Kelly, representing makers of vacuum cleaners, said a 25% tax would put this product beyond the reach of most people who do not now have them. He noted there is no tax in effect or proposed, on brooms, carpet sweepers, mops, soap, and other items used to keep the house clean.

Buffalo Conference Offers TV Prize for Servicemen

BUFFALO—A chance to win a portable television set will be given to refrigeration servicemen attending the Eastern Refrigeration and Air Conditioning Educational Exhibit and Conference here April 6-8.

The set will be the first prize in a contest sponsored by the Refrigeration Equipment Wholesalers Association. To win this, or one of two other prizes, the serviceman must fill in a blank furnished him at the show.

He must select what he considers to be the best exhibit at the show and then tell why in 25 words or

(Concluded on Back Page, Column 2)

NPA Officials, Appliance Mfrs. Meet To Discuss Controlled Materials Plan

WASHINGTON, D. C.—A meeting between National Production Authority officials and manufacturers of household refrigerators and home and farm freezers has been scheduled for March 20, it was reported here recently.

Range manufacturers are expected to meet with NPA officials shortly thereafter.

Topic of discussion, it is reported, will be the controlled materials plan that the NPA expects to put into

(Concluded on Back Page, Column 1)

Contest Winners Soon

Judging of the NEWS $1,000 contest for the most unusual air conditioning installation is currently going on. Winners are expected to be announced within a few weeks.

Get DO-97 Ratings To Help Product Flow, Service Firms Urged

DETROIT — Declaring that NPA Regulation 4, granting all businesses the use of a DO-97 priority rating for repair parts, "may well represent our chance of survival," F. G. Coggin of Detroit Lubricator Co.'s refrigeration division has requested all wholesalers of Detroit's line of refrigeration controls and accessories to urge refrigeration servicemen to get their customers to use their rating.

The serviceman can then extend the rating through the wholesaler to the manufacturer, and this in turn helps the manufacturer to get materials that will maintain the flow of vital repair parts.

"We urge you to use this tool—DO-97," stated the message from Coggin. "Insofar as expansion valve, solenoid valve, and control requirements through you, our wholesaler, are concerned we estimate that at least 85% of these are for the maintenance or repair of commercial equipment.

(Concluded on Back Page, Column 3)

Michigan State Records Saved By Dehumidifiers After Fire

LANSING, Mich.—One of the most unique salvage operations in the history of modern refrigeration and air conditioning is saving the treasures of the Michigan State Library, whose existence has been threatened as a result of the recent $5,000,000 State Office building fire.

State officials and librarians are giving full credit to Carrier refrigeration and dehumidifying equipment installed by the Garlock Sales Co. here even while the disastrous blaze was still raging on the two top floors of the eight-floor supposedly fireproof building, erected in 1922.

They are not alone in their praise. Alvin Kremer, Keeper of Collections for the Library of Congress, who flew here from Washington, D. C. four days after the fire started, and whose recommendations regarding immediate installation of dehumidifying equipment have been followed to the letter, says this action will probably save the vast bulk of the 500,000-book collection, which includes rare and irreplaceable documents, maps, and manuscripts.

Fire never came close to the library. But tens of thousands of gallons of water from seven aerial towers, poured on the top floors, seeped into the library through electrical fixtures, through ventilators, and down stairwells.

A 'round-the-clock battle was

(Concluded on Page 4, Column 2)

Copper Order Eased, Permits Greater Use In Refrigeration

WASHINGTON, D. C.—The "List B" part of the Amended Copper Order M-12 restricting the use of copper products in refrigeration equipment and components, has again been changed in the amendment made effective March 9.

The most recent changes permit more widespread use of copper than was originally permitted by the "List B" designations. Copper tubing can now be used for the "low side" refrigerant circuit on home and farm freezers, ice cream cabinets, and "wet type" beverage coolers. It apparently can also be used in evaporative condensers for "Freon" systems.

It still seems debatable as to

(Concluded on Page 29, Column 3)

Bankers' Chairman Raps Failure of Regulation W

CHICAGO—Regulation W has not stopped inflation, has not preserved the value of the dollar, and has not made men and materials available for the defense effort.

Therefore, having failed to accomplish its objectives, it should be relaxed.

That was the opinion expressed by William W. McCarthy, chairman of the consumer credit committee of the American Bankers Association, at the National Instalment Credit Conference here recently.

McCarthy declared that relaxing Regulation W would reassure prospective purchasers of major appliances and automobiles and would relieve the pressure on them to buy now. He noted that major appliances and television sets are in good supply.

American Stove Co. Bows ¾-Ton Room Conditioner

ST. LOUIS — A ¾-ton "Magic Chef" room air conditioner is the latest addition to the growing line of American Stove Co. products, according to Marc W. Pender, vice president in charge of sales.

It is the first electrical appliance to be marketed by the firm, which claims to be the "world's largest manufacturer of gas ranges."

Because of limited supplies, the room air conditioner is being introduced under a selective marketing plan in the southeastern and southwestern states only, according to American Stove.

(Concluded on Back Page, Column 5)

Second Quarter Metals Cuts In 20-35% Range

Specific Reductions for Steel Users; Supplies May Not Equal Permitted Use

DETROIT—Out of the jumble of restrictive orders governing the use of steel, copper, and aluminum which the National Production Authority has issued or amended in the past 10 days, some pattern begins to shape up for production possibilities in the second quarter.

Looking at the situation solely from the standpoint of the restrictions, the projected production cuts would not seem excessively severe. A cut of 25% at the maximum would seem to be called for.

However, the question is possibly not so much what the manufacturers will be permitted to use, as it is what they will actually be able to obtain in the way of steel, copper, and aluminum.

Steel

Manufacturers who *use* steel are restricted to 80% of the steel used in the base period, *by item*, in the products (on the restricted list) they make in the second quarter. The base period is the average quarterly use in the first six months of 1950.

There is some question as to just what is meant by the phrase "by item." It is not thought to mean that a manufacturer would have to apply it to every model in a line of refrigerators, for example. However, most opinion is to the effect that the 80% restriction would have to be applied to each *type* of product (refrigerator, range, home freezer, etc.) so that a manufacturer couldn't, for example, cut his steel use on refrigerators considerably more than the 80%, and use it to increase production of home freezers, balancing out his total use to the 80% figure. No official interpretation has been made on this point.

Copper and Aluminum

The restrictive orders on copper and aluminum are somewhat more difficult to understand than the steel order. NPA said that "fabricators" of copper would be permitted in the second quarter to use 75% of the amount of copper they used in the base period. "Fabricators" of aluminum in the second quarter will be permitted to use 65% of the base period consumption.

(Concluded on Page 29, Column 1)

Big Freezers Exempt

WASHINGTON, D. C. — Home freezers 13-cu. ft. capacity and larger, and room air conditioners over ¾-hp. in size get a special break in the new steel order.

Both items are exempt from restrictions on steel use through a special exemption set forth in Order M-47.

4 Packaged Conditioners Shown In Brunner Line

UTICA, N. Y. — A line of four floor-type, packaged air conditioners has been introduced by Brunner Mfg. Co. here. All are self-contained units in 3, 5, 7½, and 10-hp. sizes.

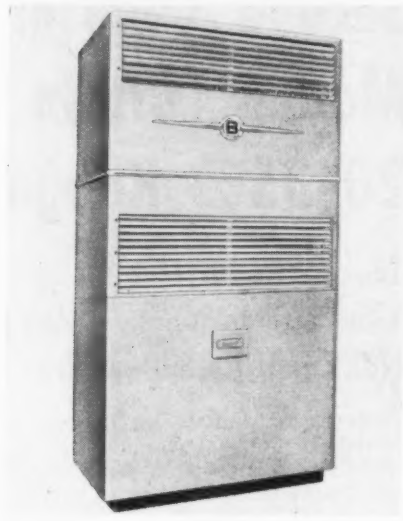
The units have cooling capacities, respectively, of 36,000, 61,000, 93,000, and 121,000 B.t.u. per hour. When fitted with steam coils, which are optional equipment, their respective heating capacities are 146,000, 220,000, 353,000, and 401,000 B.t.u. per hour. Heating output is based on two-row steam heating coil under 2-lb. gauge pressure with intake air temperature at 0° F.

Automatic operation is one of the features promoted by the company in the new line.

Behind the concealed-hinged Brunner name plate are the starter, fan, and thermostat control switches. When set to a desired room temperature, operation becomes entirely automatic, the company states.

The blower fan may be operated while the compressor is idle. An automatic safety feature is incorpo-

(Concluded on Page 2, Column 1)



Brunner 1951 Line--

(Concluded from Page 1)

rated in the form of a dual pressure control. If the thermostatic switch becomes inoperative, or if the discharge pressure becomes too high, the unit will shut off automatically.

The air conditioners are equipped with Brunner low-speed condensing units, that, the company claims, give longer wear at peak efficiency because of that low speed. Rubber mountings and flexible connections between components combine to minimize vibration and the transmission of operating sounds.

The all-copper, specially designed counterflow condenser is of the replaceable type and is independent of the receiver. This condenser assists in cooling the compressor compartment since the water flows through the outer tube.

The replaceable receiver is equipped with liquid level test cocks for checking of the refrigerant charge.

Brunner air conditioners feature a six-row deep, wide face area evaporator made completely of nonferrous metals. It is equipped with copper tubes and aluminum fins. All connections are copper welded. The tubes are mechanically expanded.

The blower fan assembly is an entirely separate unit mounted above the cooling coil and held in place by removable steel dowel pins. Each blower is actuated by its own motor. The 7½ and 10-hp. sizes have two fans.

All aluminum expanded foil filters of standard size are used. They can be easily cleaned.

Another Brunner feature is two drip pans, both of aluminum. One is located under the cooling coil, the other at the extreme bottom of the cabinet under the compressor.

Condensation from the cooling coils drains from the upper pan through a tube to the lower pan and then to the sewer. Overflow due to abnormal condensation under certain operating conditions is thus avoided, the company said.

Cabinets have a soft gray finish over Bonderized sheet steel. Service panels are of the "snap-on" design.

Air outlet louvers are adjustable to control air flow direction. The outer cabinet is completely insulated from the inner structural iron framework and the entire unit is acoustically and thermally insulated for noiseless operation. All interior assembly units individually transmit their weights to the rigid chassis.

Official Questions and Answers on NPA Priority Regulation 4

WASHINGTON, D. C.—The National Production Authority has issued the following set of questions and answers to clarify provisions of its Regulation 4. The regulation authorizes all businesses and institutions to use a DO-97 priority to get the materials they need for necessary maintenance, repair, and operation as well as for minor capital additions.

Text of the regulation was published on pages 8 and 9 of the March 12 issue of the NEWS.

Q. What is meant by "extendible DO-97 rating?"

A. Under NPA's basic priorities system, certain essential production is given preference. "DO-97" is the preference symbol assigned by NPA for use on orders for maintenance, repair, and operating supplies. This preference rating may be extended by the person receiving the rated order in the same way as any other DO rating may be extended.

Q. Is there any special significance to the number "97"?

A. The number is used for identifying the MRO program, just as other programs are identified by a two-digit number. There is only a single-band priorities system, which means that all orders with a priority rating, regardless of the program identification number, receive equal treatment.

Q. What about other organizations, such as schools, hospitals, churches, and government agencies?

A. Regulation 4 includes them, too. Federal, State, municipal, and other governmental units may use the DO-97 rating, and so may schools, libraries, churches, hospitals, and similar institutions.

Q. Does the regulation exclude any type or types of institutions?

A. No. All institutions in the United States and its possessions and territories when necessary may use DO-97 ratings to get the maintenance, repair, and operating supplies they require.

Q. Is there any limitation on the amount of these supplies a business or institution may obtain?

A. Yes. In general MRO supplies may be obtained only in the same dollar amount spent for such supplies during 1950.

Q. Must MRO quotas be figured on a quarterly basis?

A. That is right. Businesses, government agencies, and institutions simply divide the amount they spent for MRO in 1950 by four and that is their quarterly quota.

Q. Is any provision made for seasonal business?

A. Yes. A business or institution that desires to do so may take as its quarterly MRO quotas the amounts spent for MRO in the corresponding quarters of the calendar year 1950.

Q. How does a new business establish its MRO quota?

A. If it was in operation during part of 1950 it is permitted a quota in proportion to the amount spent while it was in operation, with reasonable adjustments for seasonal and other variable factors.

Q. What about new firms started during 1951?

A. They are permitted to acquire for MRO purposes the minimum amounts necessary for operation, up to $5,000 a quarter. They must obtain special NPA permission for MRO expenditures above this amount. When the quarterly quotas for these businesses exceed $1,000, the NPA must be informed in writing of the base period used, the reasons for selecting it, and what adjustments have been made.

Q. May a small businessman—say the owner of a shoe repair shop or a filling station—issue a DO-97 to obtain the supplies he needs to maintain his business and equipment in good condition?

A. Certainly.

Q. What does he have to do to use such a rating?

A. He merely writes on the order, or on a piece of paper attached to it, these words: "DO-97, Certified under NPA Regulation 4," and then signs his name.

Q. Does such a DO-97 carry the same priority value as other DOs, those issued by the armed services, for instance?

A. Yes, since all DO ratings have the same priority value.

Q. Suppose the operator of a furniture repair shop needs to get some sandpaper and hand tools. May he issue his own DO-97 to obtain these supplies?

A. Yes.

Q. After he has used a DO-97, what else must he do?

A. If he uses more than $1,000 worth of MRO per quarter, he must record the expense as a charge against his MRO quota, but if he uses less than $1,000 of MRO per quarter he need only keep a record of the transaction.

Q. Is there any provision in the regulation for minor capital additions?

A. Yes. NPA permits the use of the rating for minor capital additions not exceeding $750 for any one complete capital addition.

Q. Can an example be given showing how this provision might work?

A. Yes. Suppose a shoemaker needs a new leather stitching machine. He may obtain the machine under a DO-97 rating, providing it does not cost more than $750.

Q. Nearly two months of the first quarter of 1951 are now gone. How does a person figure his MRO quota for the remainder of this quarter, up to April 1?

A. This is covered in Direction 1 issued in conjunction with Regulation 4. In general it provides that the person must first figure his quarterly MRO quota. He is then allowed one half of this amount as his quota for the remainder of this quarter. He does not have to charge his MRO expenditures so far this year against this quota.

Q. Suppose a firm has been granted an increased quota for MRO. Must it make a new application for each succeeding quarter?

A. No. Once an increased quota is established, this becomes the firm's standard quota, unless the increase was granted on a temporary or seasonal basis, or is otherwise restricted by NPA.

Q. Many firms have already placed non-rated orders for MRO supplies. May these firms now apply DO-97 ratings to them?

A. Yes, and the ratings will take effect as of March 15 if the firm applies the DO-97 to these outstanding orders before that date. All MRO orders carrying a DO-97 rating applied prior to March 15 shall take effect as of March 15, while all ratings applied on or after March 15 shall take effect as of the dates when applied.

Q. What if a machine repair shop is hired by the proprietor of a shoe shop to repair a machine. To whose quota are the repair parts used on this job charged?

A. The machine repair shop may use a DO-97 rating to the same extent that the shoe shop proprietor would be permitted to use it if he himself were repairing his own machine. The cost of the materials is charged to the MRO quota of the person for whom the work is done—in this case the shoe shop proprietor.

Essick Mfg. Buys Sterling Stock

LOS ANGELES—Essick Mfg. Co., here, producer of air cooling equipment and construction material, has acquired all of the stock of Sterling Machinery Corp., Kansas City manufacturer of self-priming pumps and mining and contractors' hoists.

TYLER REFRIGERATED CASES

speed sales . . . prevent food spoilage losses . . . save time of clerks and customers . . . save dollars!

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It's an old story—of advanced design and superior engineering, of pioneer testing and development. Automatic freezing controls for simple operation; sturdy construction and accessibility of all parts for quick cleaning are standard SWEDEN features that add up to MORE and LONGER service . . . LESS upkeep expense.

Dispensing Soft Ice Cream, Frozen Custard and other long-profit specialties with amazing speed, SWEDEN eliminates bulk shrinkage, requires less cream weight-per-serving. Dipping, handling and scraping are eliminated; *both* food and labor costs slashed 50% and more.

And remember—the SWEDEN line is really complete. There's a model to meet *every* need, *every* budget. SWEDEN'S model variety adapts the machine to the operation, not vice-versa. SWEDEN Speed Fountain Freezers are profitable to own and operate . . . investments that pay for themselves out of EXTRA profits!

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For more information, write today to:

SWEDEN FREEZER MANUFACTURING CO.

DEPT. S-5 SEATTLE 99, WASHINGTON

Here's a Range That's New... and NEWS*!

THERE'S PLENTY about Kelvinator's great Twin Oven range... top model of a brilliant, newly designed, complete range line for 1951 ... that's new. What's more important, there's plenty that's real NEWS!

IT'S NEWS that the big right-hand oven . . . a feature of every model from the lowest to the highest priced . . . is the largest oven of any standard size range—a big 5563 cubic inches! What's more, Kelvinator's fast preheating gets the temperature of that big oven up to 350° in *less* than five minutes!

IT'S NEWS that the new mammoth size oven has space enough to roast a 30-lb. turkey or to bake eight loaves of bread, four layers of cake or six pies at once, with no shifting of pans!

IT'S NEWS that Kelvinator brings amazing new heat-up speed to the broiler and surface units. Think of the prospect appeal of surface units so fast that they'll cook a scrambled egg in less than two minutes . . . of radiant broilers that take only 10 seconds to get red hot, ready to broil!

IT'S NEWS that Kelvinator switches have "Colormatic" Control! Beautiful jeweled lights show 7 different heats in surface units—from superfast for quick frying to low enough to melt chocolate without scorching!

IT'S NEWS that Kelvinator's famed "Automatic Cook" is easier to operate . . . easier to see. It brings automatic control not only to the oven . . . but to an appliance outlet that lets the customer operate coffee makers, electric toasters, and small radios automatically!

IT'S NEWS, too, that the suggested retail price on this great range is only $389.95.

And to top it all, there's genuine news in the challenging new beauty and styling of these new Kelvinator ranges. From the lowest priced to the top of the line, they prove again that Kelvinator products are designed to attract customers. In styling and in cooking performance, they add new significance to the words . . .

GET MORE Get Kelvinator

TUNE IN! Kelvinator's new television show, *"Star of the Family,"* starring Morton Downey. See your local paper for day, time and station.

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Thor Reports Gains from Selective Dealer Plan

CHICAGO—Substantial gains in sales and earnings were reported by Thor Corp. for the year ended Dec. 31, 1950.

The company listed a 1950 net profit of $1,863,900, or $5.39 a share, on net sales and operating revenues of $29,930,337. In 1949, it earned $741,156, or $2.10 a share, on net sales and operating revenues of $23,875,995.

Raymond J. Hurly, chairman, told shareholders the 25% increase in sales was due to Thor's selective distribution program, begun early in the year, and a sharp increase in consumer buying following the outbreak of warfare in Korea.

The outlook for the present, he said, is one of operating under a partial peacetime, partial wartime economy. Continued production of home appliances will be governed chiefly by the defense program's requirements for strategic materials.

Hurley said the company, facing this prospect, has adopted a two-fold plan for 1951 operations.

1. To divert strategic metals from dishwashers and ironers to clothes washing machines because of the washer's essentiality to public health.

2. To fill the gaps in civilian goods output with defense production. One large defense order was secured last month and additional contracts are under discussion.

Meanwhile, high consumer demand for washing machines continues unabated, Hurley said. He added that, despite this trend, Thor intends to maintain its aggressive sales program.

Dehumidifiers Save Michigan State Library Records from Water Damage After Fire

(Concluded from Page 1, Column 4)

begun as library employes and maintenance men moved in for mopping-up operations, wearing "tin hats," closely followed by Garlock servicemen—also wearing these protective devices to guard themselves against large chunks of plaster falling with frequency in the great reading-room and back in the tiers of book stacks.

And now, in mid-March, it looks as though the greater portion of the huge collection will be saved. Several thousand books which were under 2 or 3 ft. of water in the traveling library section in the basement were beyond saving, but the people of Michigan have the satisfaction of knowing that most of their books have been saved by an all-out refrigeration operation.

A few days after the start of the fire, and while it was still being fought upstairs, Kremer and state library officials waded through the ankle-deep water, fallen plaster, and drifting volumes and took a relative humidity reading. It stood at 82%.

'GET IT DEHUMIDIFIED'

Kremer warned: "Get this place dehumidified immediately. There's no time to waste. You can't move the bulk of the books. You'll have to call in refrigeration experts and do the job right here!"

The Michigan State Building Division had made a firm stand that no state departments would re-enter the stricken building for some months to come. Realizing the very real danger to one of the outstanding state libraries in the nation, its officials quickly reversed their stand—for this one particular department.

The Garlock company was contacted. Within a short time machinery was being installed, with the objective of getting temperature and humidity under control. The Garlock crew worked up to 16 hours a day.

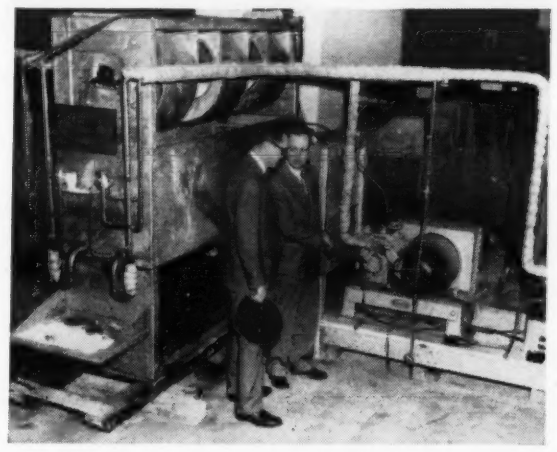
Hurriedly obtained from the Michigan State Prison at Jackson was a large 15-ton 15-Q-7 Carrier cold diffuser. Tables were shunted out of the way in the reading room to make space for this cumbersome piece of equipment, which was about the last thing staid librarians ever expected to see in these hallowed halls of research and learning.

VARIETY OF UNITS USED

The cold diffuser was equipped with a 3-hp. blower and four 3-hp. air-cooled condensing units for cooling of the coil.

On each of the four levels of the book stacks four refrigerating coils were placed, controlled to dehumidify the jungle-like atmosphere. Three compressors were connected to these 16 coils. Two of them were Carrier 5-F-20 5-hp. compressors, while a third was a 7½-hp. 5-F-30 model.

Twelve small Carrier ⅓-hp. dehumidifiers, designed to clear up damp basement conditions, were also in action, being used to good advantage in the exceedingly humid basement traveling library section, and in an upstairs vault where original historical documents dating back to the beginnings of the state, were threatened. They kept the damage down to a minimum which is not expected to top 10%.



To salvage irreplaceable books and records soaked with water when a $5,000,000 fire struck the State Office Building of the State of Michigan, refrigeration equipment was hurriedly installed to dehumidify the huge library housed in the structure. Here Ron B. Garlock (left) and M. L. Baldwin, engineer, of Garlock Sales Co., Lansing Carrier dealer, check their installation.

A mile away, on the other side of the city, some 25,000 of the more badly-soaked books made a strange spectacle, lined up on bleachers in the Michigan Boys' Vocational School gymnasium, where other dehumidifiers had gone into action. Most of these volumes are being saved as a result of this action.

SQUEEZE OUT 500 GALS.

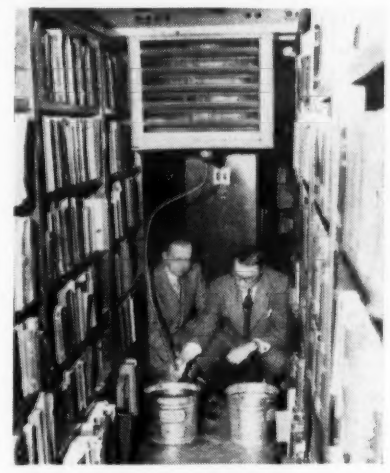
During the first week, nearly 500 gals. of water were squeezed out of the air in the library. As the humidity was pulled down, the rate of extraction was slower but was still read in hundreds of gallons. Books which had swollen so tight in the shelves that they could not be moved, gradually returned to normal size.

Mrs. Loletta Fyan, state librarian, reported that it had not yet been possible to take a complete inventory, but that it appeared damage would be held to a minimum. She added that "the whole thing is a miracle."

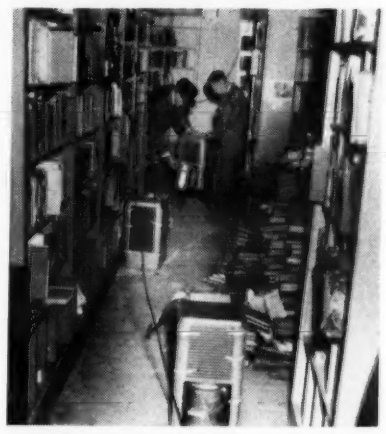
After two weeks of operation, the relative humidity in the library, which at one time hit 85%, had been pulled down to 29%, while the temperature had been raised from 50° to 80°.

The salvage operation was directed by Ron B. Garlock of the Garlock company and M. L. Baldwin, veteran Garlock engineer. While reporting they had to adopt some "novel" expedients in the emergency, the job was expertly engineered. Equipment was selected against a measurement of the cubic space of the library and was arranged to provide between five and 10 complete changes of air every hour.

This proved sufficient to accomplish the necessary dehumidifying action.



Nearly 500 gals. of water was pulled out of the air during the first week after the fire by 16 of these coils, plus a 15-ton diffuser and 12 small dehumidifiers.



Relative humidity was at 85% in the state library after the fire, but the refrigeration equipment had pulled it down to 29% in a week, and badly swollen books were returning to shape.

Our dealers are doing business in a big way WE'LL TELL YOU WHY...

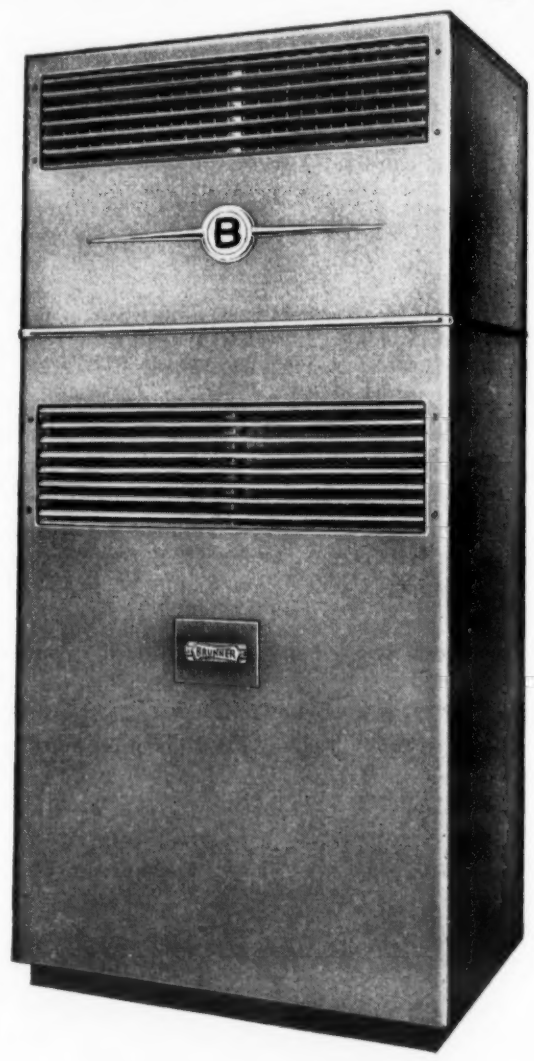
BRUNNER SINCE 1906 AIR CONDITIONING

First of all Brunner Air Conditioning Units, both self contained and remote, are Brunner built. We have absolute control over every point and every design feature that contributes to their maximum efficiency.

Buyers know what they want. Air conditioning is no longer new and in a highly competitive field prospects will choose carefully. Brunner units are built for long, dependable, carefree operation and these qualities are instantly recognized in comparison.

Brunner has customer acceptance. This name is no stranger to folks who buy refrigeration and air conditioning.

Brunner takes care of their dealers. Modern factories, skilled workmen and specialized production lines give you what you want and when you want it.



THERE'S MUCH MORE TO BE TOLD so fill in below and our factory sales engineer will stop by with all the facts of why you could well be sharing in this profitable business. We'll send 1951 literature along at once.

CUT OUT AND MAIL

Name

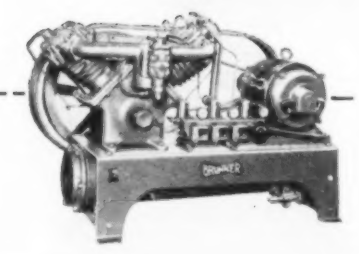
Company

Address

City and State

BRUNNER SINCE 1906 **AIR CONDITIONING**

- Self Contained 3 HP. to 10 HP.
- Remote Type 3 HP. to 75 HP.

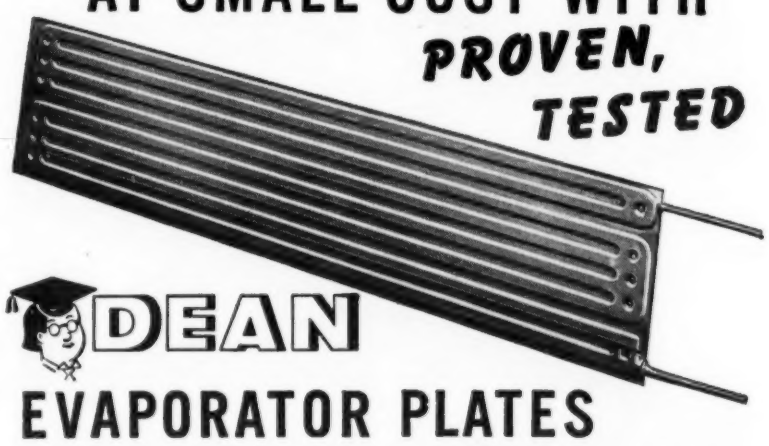


BRUNNER MANUFACTURING CO., Utica 1, New York, U. S. A.

REFRIGERATION CONDENSING UNITS by
AIR AND WATER COOLED MODELS—*a size and type for every purpose...* **¼ HP. TO 75 HP.**

BRUNNER SINCE 1906

GET BIG PERFORMANCE AT SMALL COST WITH PROVEN, TESTED



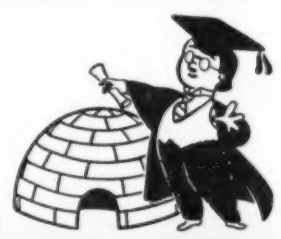
DEAN **EVAPORATOR PLATES**

There's a DEAN cold plate for every application . . . designed and built by men who have years of experience and practical "know how" in solving difficult refrigeration problems . . . your guarantee of quality.

DEAN makes cold plates for ice cream cabinets, locker plants, soda fountains, farm milk coolers, farm freeze cabinets, low temperature test rooms, frosted food refrigerators, window displays, food counters, refrigerated transportation and sub-zero applications for industrial chilling. Custom built plates available on special order, such as cylinders, U's, angles, tanks, stainless steel, etc. Plates also available for Baudelot-Type Coolers.

SEND FOR YOUR COPY OF OUR TECHNICAL DATA BOOK

DEAN PRODUCTS, INC.
Factory & Main Office
1042 Dean Street, Brooklyn 16, New York



20-Year Guarantee!

ON THE WETTED DECK SURFACE

IN THESE NEW HALSTEAD & MITCHELL COOLING TOWERS

Built like a Battleship

HOUSING—

Of heavy 10 gauge (⅛") sheet steel, with 3 coats of Bitumastic lining, and 4 coats of outside special weatherproof paint. No zinc or alloys used, thus eliminating electrolysis or possibility of galvanic action. Electrically welded cabinet.

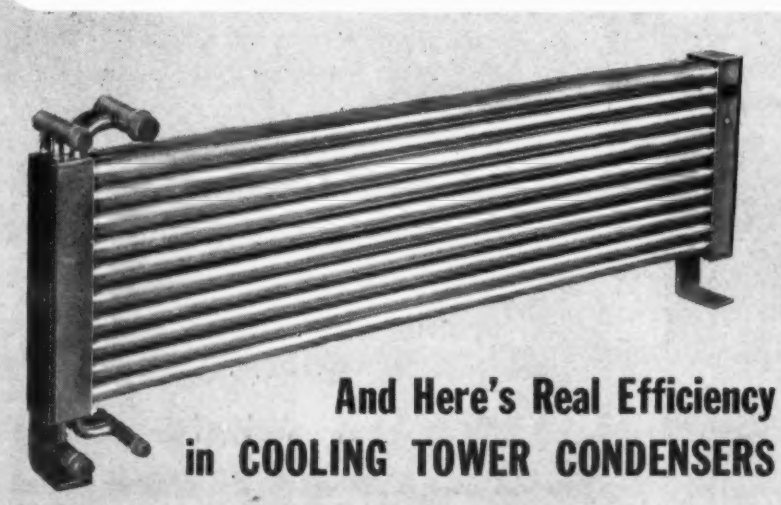
FANS & DRIVES—

A quiet-operating high-pressure 8-bladed STAINLESS STEEL fan, and with stainless steel shaft. Chrome-dipped rust-proofed pulleys, ball-bearing grease-sealed fan bearings, cast iron bearing supports.

Yes . . . here's 20 years of foolproof performance in an all-around, efficient, economical and lastworthy cooling tower. Halstead & Mitchell's processed wetted deck surface is chemically treated with special Koppers wood—guaranteed 20 years against rotting and proofed against fungi growth. Gravity-type distributing pan eliminates extra pumping head required on spray-type towers, and cuts down windage losses due to atomizing of water. And, it's easily cleaned —accessible through inlet air side of tower.

Capacity range 5, 7½, 10, 15 and 20 tons

NOTE: Stainless steel high-pressure fans are multi-bladed, using 8 blades or more, reducing pulsation effects and allowing for proper air delivery against static pressure resistance of duct work. Adjustable belt tension.



And Here's Real Efficiency in COOLING TOWER CONDENSERS

Special header slotting, and double-tube counter-flow heat exchanger relationship between water and hot refrigerant gases allows lowest possible head pressures when inlet water temperatures are high. Cleanable from both ends. In ⅓ thru 25 H.P. Capacity. Catalog No. C-3.

HM Halstead & Mitchell

OFFICES: Bessemer Building, Pittsburgh 22, Pa.

AT LEADING WHOLESALERS EVERYWHERE—OR SEND FOR DESCRIPTIVE LITERATURE & PRICES

'Sickle Psychosis'

Bernard Mitchell Offers Alternative To Flat 20% Government Cutbacks, Which He Considers Undesirable Expedient

CHICAGO — The advisability of across-the-board, flat 20% cutbacks in steel, and similar type restrictions in other necessary raw materials—which he terms "sickle psychosis"—has been questioned by Bernard A. Mitchell, president of the Mitchell Mfg. Co., here, in an open letter to Illinois Senators and Congressmen.

Mitchell suggested that the government should, in the future, guard against "sickle psychosis," which he defined as "an indiscriminate slicing away of fixed percentage, of steel, copper, aluminum, and other vital materials used by industry." Instead, he advocated grading the percentage of the cutback upon logical need-factors such as the actual proportional use of raw materials in each specific industry.

MANY REASONS FOR GRADATION

"There are many reasons in favor of this gradation," Mitchell stated. "In the first place, some types of manufacturing operations do not use as much steel, and/or other materials as do others. For example, the radio and television industries use relatively little steel in the final product, while automobiles and refrigerators consist of a comparatively large percentage of steel."

A second reason for a percentage gradation among industries is that many manufacturing products can just as readily be built with more available substitutes. These substitutes may be more expensive, they might slow down production; but without too much time loss the finished product can be delivered. Along this line, businesses which can shift to synthetic materials should assume a larger percentage cutback in scarce raw materials; whereas those which cannot utilize synthetics should be given a smaller reduction, proportionately.

Metal furniture, for example, which used steel or aluminum tubing, can be turned out in wood or plastic. Many products using rubber, such as rubber coated wire, can switch to plastic synthetics. Items formerly using great amounts of copper as in plumbing pipe can be replaced by workable substitutes in iron and plastic.

Thirdly, many companies are in a position to reduce the amount of steel and other essential metals without harming the basic, organic structure of their product. Automobiles can make a sizeable reduction in the use of many vital materials by eliminating the trim, gadgets, and the other unessential parts of a car. And they can still turn out a first-rate automobile. Other industries need every bit of their steel allocation for the essential elements in their products, without which there could be no final product.

This gradation theory would tend to reduce factory shutdowns in the industries most dependent on raw materials for their organic use without harming those businesses which can take in their stride the necessary shifts or replacements or reductions, Mitchell contends. Such a policy would tend to add balance to the national economy and to keep the maximum number of people at work all the time, an important consideration in view of the fact that the employer and the employe actually pay for the bulk of our military efforts through taxes on their incomes.

FLAT CUTS ARE SIMPLEST

Mitchell conceded that across-the-board cutbacks were certainly the simplest and quickest expedient for the government to follow in securing needed resources. In any desperate, 24-hour emergency, no one could complain about resorting to such expediency. "But, I am concerned lest government take the easiest way out, all the time, regardless of the emergency, thus falling into the 'sickle-psychosis' habit," he said. "This method is certainly not the BEST way to secure resources, given a moderate amount of time for advance planning. If we do have the few weeks or months to make such decisions, then our objective must be a curtailment, industry by industry, which is most equitable, most consistent with our economy, and most unlikely to upset that economy."

PRECEDENT FOR GRADATION PLAN

Our nation, insisted Mitchell, has accepted the premise of gradation, for example on income taxation, whereby the percentage of tax is arranged to increase as the gross income increases. "When the Treasury needs funds to finance our defense efforts, our authorities do not resort to a 'flat 20%' increase in taxation regardless of size of income or extenuating circumstances. We graduate that tax so that it is applied more fairly upon all elements of our population.

"That same premise has identical application when we go about reducing the availability to industry of scarce materials—a tax, as it were, on the resources of industry. Our government should, if at all possible, work out this gradation equitably, and save the 'sickle' for those drastic, 24-hour emergencies."

Mitchell explained that his own business has many diverse products. "Thus, no matter what plan the government chooses," he said, "even the 'sickle' choice, I would be effected about the same. I am not grinding a personal axe, but rather one for the economy, in general. Many one or two product businesses —especially many of the smaller operation—are not 'insured' against flat cutbacks, and it is on their behalf that I propose this 'gradation.'"

York FlakIce Machine Wins 'Design News' Award

NEW YORK CITY—For excellence in general mechanical design, for function in appearance, economy, material applications and finishes of standard components, the "FlakIce" machine manufactured by York Corp. received the annual Modern Design Award from *Design News* magazine, it was announced here.

West Penn Dealers' Appliance Volume Hits High for Jan.

PITTSBURGH—New high volume figures for any January on record were rolled up by appliance dealers in the southwestern Pennsylvania area covered by the West Penn Power Co. on freezers, room coolers, refrigerators, ranges, dishwashers, garbage disposers, clothes driers, automatic and conventional washers, and water heaters.

Statistics released by the utility showed that January sales of room coolers were 300% higher than in the same month last year. Clothes drier sales were up 250%.

Less spectacular but still impressive percentage gains were scored by water heaters (72%), automatic washers (60%), conventional washers and dishwashers (59%), freezers and ranges (55%), garbage disposers (40%), vacuum cleaners (27%), refrigerators (24%), and ironers (18%).

As compared with December, 1950, however, room coolers again were way out in front with a 167% gain. Other volume increases were made by freezers (up 27%), water heaters (up 9%), conventional washers (up 4%), and refrigerators (up 1%).

Declines in volume were noted in ranges (down 11%), automatic washers (down 20%), dishwashers (down 32%), clothes driers and vacuum cleaners (off 33%), garbage disposers (off 34%), and ironers (off 44%).

The unit volume comparisons are as follows:

Appliance	Jan. '50	Dec. '50	Jan. '51
Refrigerators	1,229	1,499	1,525
Freezers	250	304	387
Room Coolers	2	3	8
Dishwashers	42	99	67
Garbage Disposers	25	53	35
Ranges	549	948	848
Clothes Driers	62	321	217
Ironers	214	456	254
Washers, Automatic	323	641	517
Washers, Conventional	1,156	1,763	1,842
Vacuum Cleaners	531	1,006	677
Water Heaters	245	385	422

Boost Refrigerator Sales PDQ Profits Develop Quickly

when you sell the brand new 1951 Deepfreeze Refrigerators!

The "Wonderful-to-Live-With" Deepfreeze Refrigerator

...with the most important door in your home!

• EGGSTOR—handy egg storage, with visual inventory! Right up in front. • BUTTER BOX—with Spread Control, keeps butter ready to spread. Holds one pound in attractive serving tray! • HANDY JUGS—two one-quart bottles for chilled juices or water. Ready to serve. Easy to use—at your fingertips. • HANDY BIN—for the convenient storage of small greens, fruit and vegetables. Removable for greater utility. • BOTTLESTOR—easy to reach. Holds tall quart beverage and milk bottles.

They're New Inside and Outside... They're So Wonderful to Live With!

The brand new, advanced features your customers see in Deepfreeze Refrigerators are *just what they've wanted!* Beauty in refreshing new design... a wealth of new convenience... storage space for everything... and dependable Deepfreeze performance make Deepfreeze Refrigerators easy to sell. Deepfreeze has carefully surveyed the market to bring you complete coverage of customers' needs in refrigerator sizes, models, and features. Check the many important Deepfreeze advantages... see why *the Deepfreeze franchise is wonderful to live with!* It's the franchise with a future—in 1951!

AND THERE ARE MORE FAMOUS FEATURES THAT MAKE DEEPFREEZE DELIGHTFULLY DIFFERENT! SIX EXCITING NEW MODELS FOR EVERY FAMILY'S NEEDS!

In '51—GO BUY THE NAME—

Deepfreeze

TRADE-MARK REG. U.S. PAT. OFF.

HOME FREEZERS · REFRIGERATORS · ELECTRIC RANGES · ELECTRIC WATER HEATERS

All Products of Deepfreeze Appliance Division, Motor Products Corporation, North Chicago, Illinois

Bendix Sales Branch Gets Cease and Desist Order

WASHINGTON, D. C. — The Detroit sales and service branch of Bendix Home Appliances, Inc., should be ordered to cease and desist from discouraging membership by its employes in the Automobile, Aircraft & Agricultural Implement Workers, CIO, Trial Examiner Robert E. Mullin recently recommended to the National Labor Relations Board.

Mullin also recommended the following:

That the company cease and desist from interfering with the administration of Local 636, Association of Journeymen & Apprentices of the Plumbing & Pipe Fitting Industry, AFL, or contributing support to it unless and until that union shall have been certified by the board as the collective bargaining representative of its employes.

That the company cease and desist in interfering with, restraining, or coercing the employes in their self-organizational rights.

That the company offer three employes immediate reinstatement with back pay.

That the CIO union's complaint be dismissed insofar as it alleges that the company violated the Taft-Hartley Act by stating that the plant would be closed down before allowing a union to come in, and by negotiating with the pipefitters for a wage increase for its employes at a time when a question concerning representation was pending.

Business Resumes After Fire at Price's, Inc.

PORTSMOUTH, Va.—Business has been resumed at the appliance store here of Price's, Inc., following a fire which gutted the second floor, destroyed a large stock of television sets and other equipment, and disrupted service operations.

Construction of a temporary roof permitted reopening of the store 10 days after the blaze. Work has already started on permanent repairs but is not expected to be completed for several months. Meanwhile, the company's service department is located at 406 Middle St.

Free Suppers, Dinners, And Breakfasts Help Sell Home Freezers

NIAGARA FALLS, N. Y. — Omel Furniture Co., here, staged a business-getting promotion on home freezers by offering from one to three weeks' supply of frozen food with each freezer purchase.

The food offer included a breakfast, a dinner, and a supper for the period of a week, according to the dealership.

In the breakfast food group were four cans of orange juice, two pounds of bacon, two dozen eggs, and two dozen rolls.

The dinner group included six packages of soup, twelve steaks, six pints of ice cream, and two dozen rolls.

The supper group included one chicken, four chops, two steaks, four packages of French fries, four packages of squash, two packages of peas, two packages of carrots, four loaves of bread, two pies, and two packages of strawberries.

TV Educates Farmwives

Program on Freezers Proves Worth of Medium In Promoting Sale of Home Appliances

TULSA, Okla. — A television program, presented three times per week for one month to educate farmwives to the advantages and uses of home freezers, has boosted freezer sales for Tulsa Tractor & Implement Co., International Harvester dealer here.

The Tulsa concern presented a home economist via the video waves who instructs the audience on selection of a home freezer, method of packing it, and the cash savings possible through wholesale purchases of meats and other foods. Many entertaining "tricks" were included.

'EXCELLENT' RESULTS

The program was set up by Clinton Johnston, head of Tulsa Tractor & Implement Co., as a test to determine the efficiency of television as an appliance-selling agency, and "results were excellent," he said.

"The only major mistake we made was to present 4 and 11-cu. ft. sizes of home freezers," Johnston indicated. "The first too small, and the other too large for most purposes. Actually, we sold many more 7-cu. ft. boxes from the stunt than 4 or 11-ft. models."

The television program was broadcast from the model-kitchen studio of a Tulsa radio station. It consisted of three 15-minute programs per week, at the noon-hour, when it was felt most housewives would be relaxing after preparation of the noonday meal.

The program included a complete description of the home freezer, its development, temperature control, etc., with visual presentation of rock-hard meats and other foods, frozen for long periods in home freezers.

Next, the demonstrator displayed methods of cutting, wrapping, and freezing various food products, and their placement in the home freezer to permit circulation of air, etc.

SAVINGS STRESSED

Part of each program was devoted to a presentation of the savings by which the home freezer can pay for itself, in a limited period of time.

As an extra "selling hook" during the one-month television drive, each purchaser was offered $20 worth of free groceries in the home freezer at delivery time. International Harvester and Tulsa Tractor & Implement Co. shared the cost.

While this "premium offer," of course, helped to accelerate sales in general, it was not so much the saving offered, but a clear understanding of the application of the home freezer to the average farm home, which netted the most sales, Johnston found.

The result was the heaviest volume of home freezer sales during the period following the television promotion in the Tulsa Tractor & Implement Co.'s experience. It proved to Johnston that video is by far the best medium to build up a general understanding and market for home freezers.

Sign the Franchise with a Future

P.D.Q.

Progressive Dealers Qualify!

After you've seen all others, see the new 1951 Deepfreeze Appliances! You'll sign the Franchise with a Future because it gives you the appliance line America wants! The wonderful new Deepfreeze products feature new convenience, new beauty and revolutionary new features. Dramatically different, they represent the improvement dealers and consumers *expect* from this Famous Name Manufacturer. In 1951—as always—Deepfreeze can be the profitable mainstay of your business. Get the *complete* appliance picture . . . see the great new Deepfreeze line.

To meet its fast-growing demand Deepfreeze expanded production facilities with a new refrigerator plant. This means new opportunities for *more Deepfreeze Dealers* to build their businesses with a fast-growing appliance line! Take advantage of this historic opportunity—P.D.Q. Join the aggressive family of appliance dealers who are going places with Deepfreeze!

See Your Distributor . . . P.D.Q.

for details about the greatest appliance franchise for '51!

Your Deepfreeze franchise gives you a head start for greater appliance profits in '51! Have your Deepfreeze distributor explain it in detail . . . find out what Deepfreeze will do to help you sell. You can share in the new Deepfreeze profits from the very start!

Or Send Coupon for All the Facts!

Deepfreeze Appliance Division
Motor Products Corporation, North Chicago, Illinois

Gentlemen: I'm interested in the greatest appliance franchise for '51! Please give me the complete story P.D.Q.

*Name*_____

*Street*_____

*City*_____ *Zone*_____ *State*_____

© 1951 Deepfreeze Appliance Division, Motor Products Corporation.

Portable Public Address System Serves Dealer as Extra Specialty Salesman

England, Ark. — Three portable public address systems for voice amplification at outdoor picnics, fairs, and barbecues, are termed "my three best outside salesmen" by E. P. Scruggs, head of Scruggs Electric Co., appliance dealership here.

Scruggs built the three public address systems himself. All three are loaned without charge to local associations, clubs, and churches, for outdoor events.

Scruggs' mechanics set them up, oversee their operation, and take them down at the end of the event. Scruggs' only request is that he be allowed to set up a display of appliances at each scheduled event.

The Arkansas dealer uses a flat-body truck for his "portable display" which includes refrigerators, home freezers, automatic laundry equipment, ranges, and a variety of other electrical living conveniences.

The truck is always parked near the headquarters location for each such event, and as many as 3,500 people have been "exposed" to demonstrations through the day.

Not only does the portable truck display bring the Scruggs' name to hundreds of new people at all such outdoor events, but registrations are always taken. All are followed up either by mail or personal calls, and these net many sales.

During the summer season, each one of the public address systems is "booked" for as many as three or four uses per week. During the winter months, they "go indoors" for athletic competitions in the high school gymnasium and in the city auditorium.

"Each of the public address systems has paid its cost many times over in major appliance sales," Scruggs declared, "and thus, they are my most consistently effective specialty salesmen."

WHY WAIT?

Get your new product info pronto. Use coupon on "What's New" page this issue. Use Key No. for fastest service.

Producer Offers Hints For Heating Contractors On Conserving Supplies

CHICAGO—With serious shortages of materials imminent, one heating equipment manufacturer passes along these four suggestions to the heating contractor, so that the use of available materials may be extended to as many homes as possible.

These economies, according to the manufacturer, can be made without sacrificing performance, although under regular peacetime conditions other methods might be preferred.

The suggestions are:

1. Design hot water heating systems for higher temperatures. With 225° F. water instead of 180° F., radiator and convector sizes can be as much as 30% smaller.

2. Eliminate the use of swing joints in radiator connections. University of Illinois research has indicated that, in small and medium sized homes, substantial savings in fittings and labor can be made with complete satisfaction, when the supply mains are cushioned against expansion noise.

3. Utilize one-pipe hot water installations equipped with mono-flow fittings. These do the same effective job as two-pipe installations which are extravagances of pipe, fittings, and labor.

4. Utilize the furnace boiler in summer as well as in the winter. This year-round boiler use prolongs its life—experiments have shown that one summer's idleness is more harmful than two winters of operation. Besides providing an inexpensive supply of domestic hot water in the summer, the regular use of the boiler also cuts down on maintenance costs and labor service hours.

Florida Bulb Co.'s New Refrigerated Warehouse Will Preserve Dormancy

MIAMI, Fla.—A refrigerated warehouse designed to keep home-grown and imported flower bulbs in a perfect state of dormancy is currently being constructed here for the Florida Bulb Co.

The warehouse is part of a structure designed by architect Tony M. Sherman. It is located at 2950 N.W. 7th Ave. Contract for air conditioning, refrigeration, and insulation is held by Hill York Corp., here.

In describing the installation, Sherman related, "Flower bulbs are extremely sensitive. They must be kept at the proper temperature and humidity with a very positive means for the control of moisture. If this is improperly done, the bulbs may germinate too soon, rot, or become sterile.

"Bulbs are delivered to the warehouse from farms in huge trailer trucks," he continued. "Trays of bulbs will be unloaded and placed on an automatic conveyor to be stacked in rows 12 ft. high.

"As the 'hot' bulbs are fed into the cold storage room, automatic temperature and humidity controls readjust themselves to the loading requirements and the entire refrigeration system works to cool the bulbs and remove excess humidity, for as living things, they constantly give off heat and moisture.

"An automatic alarm system has been incorporated to forestall any possible mechanical failure.

"To achieve a perfect state of dormancy is the chief objective of this complicated refrigeration setup. Vast quantities of dry, cool air will continuously circulate over and around the bulbs.

"The refrigerated storage room of the new building will be 60 ft. long and 63 ft. wide, with an average height of 17 ft.—enough to hold literally millions of bulbs."

Westinghouse Moves Chicago Sales Office

CHICAGO—The Northwestern district headquarters and Chicago sales office of the Westinghouse Electric Corp. were moved to a new and permanent location encompassing 45,000 sq. ft. of space in The Merchandise Mart on March 3, it was announced by Wallace O. Ollman, Mart general manager, and Fred T. Whiting, vice president of Westinghouse.

The new quarters, located on the north side of the Mart's second floor, are entirely air conditioned. They are equipped with five different types of lighting, demonstrating the most modern achievements of the company's lighting engineers.

The space, one third greater in size than that formerly occupied by Westinghouse in the Kemper Insurance Bldg., will house the firm's appliance, apparatus, lamp, B. F. Sturtevant, and home radio divisions, as well as the apparatus engineering and service staffs.

AUTOMATIC VENDER for ice cream has added to the rapid flow of customers at the Reading Terminal in Philadelphia. As evidenced by the bright smiles, the small fry must like the idea too.

Ice Cream Vendor Eliminates Bottleneck In Philadelphia Railroad Terminal

PHILADELPHIA — The Horn & Hardart Automat restaurant in the Reading Terminal at 12th and Market Sts. here has become even more automatic with the installation of a Kold-Hold plate refrigerated section for dispensing of ice cream. The Reading Terminal Automat installation was the first one of its kind, but others are being made in other Horn & Hardart locations.

Formerly it had been necessary for the Automats to make use of a special ice cream counter at which the customer had to wait for the counter man to dip his order.

The original installation consists of six compartments, each maintaining 0° F., using four sides of Kold-Hold surface. The front of the compartment is double-pane glass, and the back is solid insulation board, with a hole for the operator's inspection. The inside of the back door is covered with one-way glass. Each compartment is illuminated.

Refrigeration is furnished by a ½-hp. York condensing unit.

The ice cream is dispensed in paper cups. In operation, the customer inspects the ice cream through the glass door, decides on the flavor desired, places three nickels in the slot, thus releasing the catch on the front doors, lifts the door, and removes the ice cream.

Color Film Describes 'Rainbow' Action Used By New Hotpoint Driers

CHICAGO—"The Miracle of the Rainbow," a full-length, 15-minute color film, explaining the advantages of the new Hotpoint drier with rainbow drying action is now available to distributors and dealers through Hotpoint, Inc.

The story tells of a young housewife's conversion from intense dislike of driers because of the lint and moisture problem to one of delight with the new Hotpoint drier, which requires no ventilating ducts or lint traps.

The film, a 16 mm, size, was made by the Atlas Film Corp. of Oak Park, Ill. Dealers may get both the film and projector from their distributors.

Other films available to dealer include "Cleanest Story Ever Told," the story of the Hotpoint automatic washer, and "Managed Marketing at Work," offering selling suggestions to dealers.

Strand Opens In Biloxi, Miss.

BILOXI, Miss. — Presteline refrigerators will be featured by Strand Furniture and Appliances, which held its grand opening at 118 E. Howard Ave., recently.

HOW TO SELL REFRIGERATION
TO THE PROSPECT WHO SAYS

He is in the habit of paying his suppliers daily.

As a result, at the end of the month there is not enough left to pay large down payments and lump sum monthly payments.

Your Answer Is

THE METER PLAN

OF

DAILY SAVINGS

Meter-Matic DM6 Meter

- LOW IN PRICE
- FULLY GUARANTEED
- IMMEDIATE DELIVERY

Your Customer Deposits Just a Few Quarters a Day.

MAIL THIS COUPON TODAY

INTERNATIONAL REGISTER CO.
2626 W. Washington Blvd.
Chicago 12, Illinois

International Register Company — Dept. 31-R
2626 W. Washington Blvd.
Chicago 12, Illinois

Send me FREE of charge:

- ☐ Meter Catalog and Meter Plan Folder.
- ☐ 1951 Survey "How Many Dealers Use Meters—And Why!"
- ☐ List of banks handling Meter Plan paper.

Company ..... Name .....
Address .....
City ..... Zone ..... State .....

SUPER-COLD
COMPLETE FOOD STORE REFRIGERATION UNDER ONE GREAT NAME

Write for new liberal Distributor-dealer franchise agreement.

THE SUPER-COLD CORP.
1030 EAST FIFTY-NINTH STREET
LOS ANGELES 54, CALIFORNIA

Redmond
MICROMOTORS
Prompt shipment!
74 different models in stock
FACTORY DISTRIBUTORS
CYCLO-FREEZ CORP.
2120 S. Lyndale, Dept. A, Mpls. 5, Minn.

YOU CAN'T BEAT THE VICTOR
DISPLAY CASE LINE

- Every type of display case.
- For Meats, Vegetables, Fish, Delicatessen and Dairy Products.
- Self-Service and conventional cases.
- Variety of sizes and endless models for any store layout.
- Economical and Efficient.
- *Displays that Sell.*

For information write:

Victor

MANUFACTURERS OF THE FAMOUS VICTOR QUICKFREEZE

PRODUCTS CORPORATION • HAGERSTOWN, MD.

Service Firm Licensing

Better Business Bureau President Believes It Gives Government Too Much Power, Suggests Industry Control Itself

NEW YORK CITY — Victor H. Nyborg, president of the Association of Better Business Bureaus, questions the wisdom of licensing and bonding consumer product service companies.

In an article entitled "Quacks of the Electronic Age" appearing in the March issue of *The American Magazine*, he asked who is to be the judge of satisfactory service?

Discussing the complexities of many of the mechanical and electronic aids and devices now used by the American public, Nyborg singled out television as causing the greatest confusion and dissatisfaction with the public.

If this situation is not soon corrected by the industry, it will result in legislative control of some sort, he warned. This, he believes, is not the answer.

Cites Voluntary Control of Video Service In New York

Instead, he offered "self-government," citing the new joint television industry-Better Business Bureau program in New York City which is now serving as a model for similar efforts in other BBB cities. He considers this a good example of effective voluntary action by business in the public interest.

Reputable dealers and service companies in these cities are now following cooperatively planned codes and standards to reduce the large number of public complaints handled by the Bureaus, and to eliminate the harmful practices of "fringe elements," it was noted. Newspapers are cooperating, also, by using these standards as a guide in accepting television set and service company advertising.

Public 'Confused' by Service In Other Fields Too

Nyborg explained that public confusion and dissatisfaction also exists in the vacuum cleaner, sewing machine, refrigerator, automatic furnace, and automobile repair fields, but to a lesser degree.

He described the heart of the problem in the television field as follows:

"When buying a set, a customer has often been expected to depend on a service company for installation as well as service, and sometimes even for the fulfillment of dealers' representations as to performance. This, as far as I know, is the first time in business history that responsibility for the alleged value of merchandise has been so divided.

"And it has led, in some instances, to what is known as the 'three-cornered brush-off' which means where the service company refers complaints back to the dealer who, in turn, passes the buck to the manufacturer, who cannot be expected to understand each individual situation and, therefore, can understandably give only a general opinion."

In some cases, he said, the dealer takes the position that delivery ends his responsibility in the matter and that what happens thereafter is the customer's affair, even though the customer has no arrangement with a service company. "And such is the confused and unstable condition of a growing industry that the dealer can make it stick."

Harking back to the old-time sellers of "snake oil" and other "phony panaceas," Nyborg said these "modern pitchmen and shills victimize us in this age of scientific marvels we do not understand. And just as quack doctors of medicine have victimized people when their bodies were ailing, so do quack doctors of mechanics victimize us when our gadgets are ailing."

With the development of each new marvel for the public to use and eventually to depend on one way or another, such as color TV, he stated, they will multiply and increase their activities. He asked: "What to do with the ones who are careless, dishonest, or indifferent. That is the problem."

Comparing these "mechanical doctors" to medical doctors in that their specialized knowledge makes them necessary to modern living, Nyborg said the difference lies in the fact that the mechanical doctors have no "defined ethical responsibility and, indeed, not a well-defined legal responsibility. Therefore, it is possible for rackets to flourish.

"Licensing, so this argument runs, would curb rackets, keep out swindlers, and make it easier to deal with the guilty, because a license holder would be responsible to the state for his actions, and anybody operating without a license would be subject to criminal prosecution."

He acknowledged that this is a popular argument which "sounds convincing," but he condemned the reasoning behind it as "erroneous." He pointed out that while licensing would have a deterring effect, there are still the minority of shyster doctors who act for crooked rackets, the criminals who perform abortions, and the quacks with phony nostrums who have not been stopped by licensing.

Licensing Would Give Gov't Too Much Power

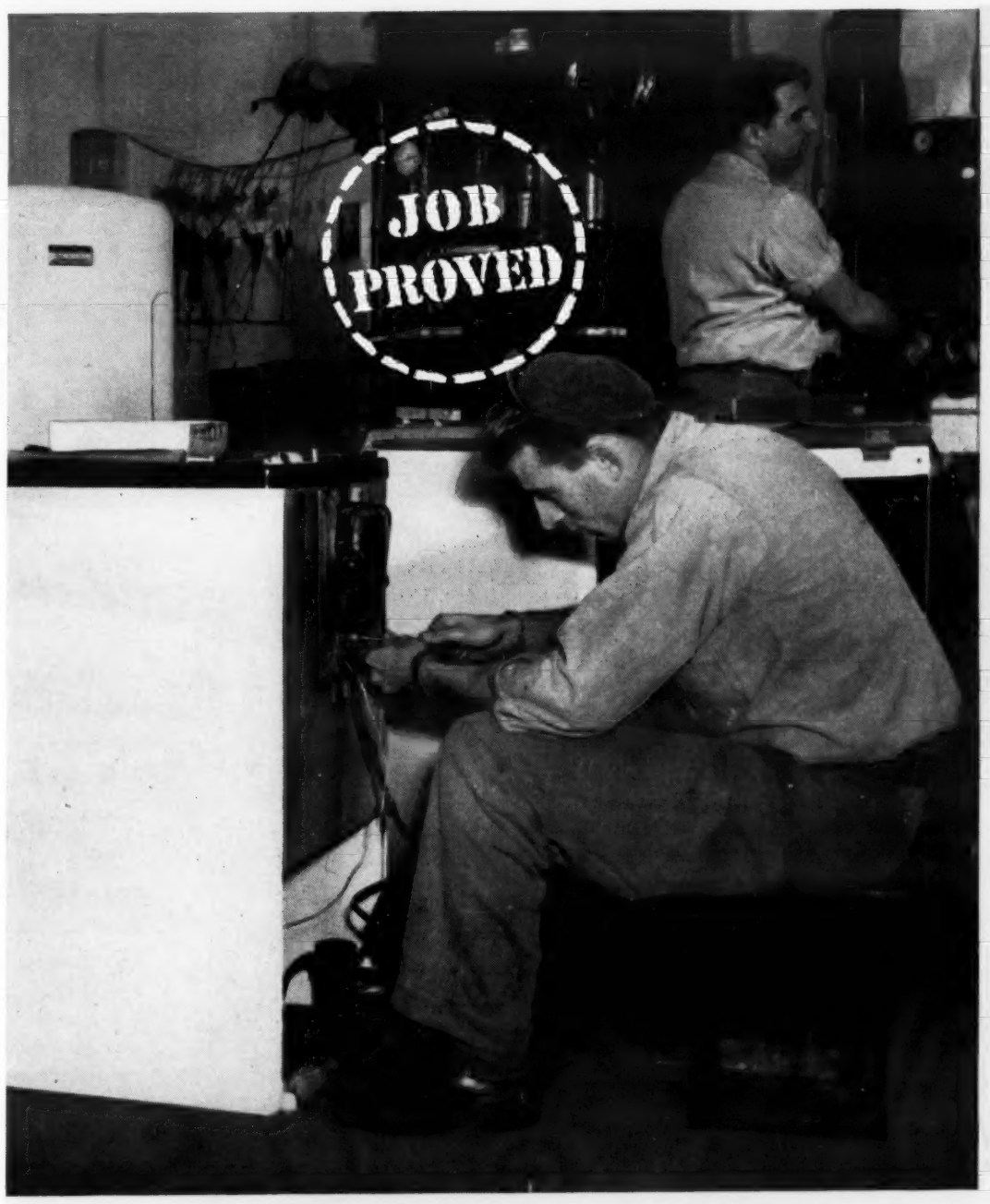
He added that he believes licensing "would give government too much control over business and industry and invite political interference beyond anything we have seen up to now." He fears, however, that licensing or some other form of controlling legislation "is bound to come unless something is done," but suggested that "it had better be done by industry itself."

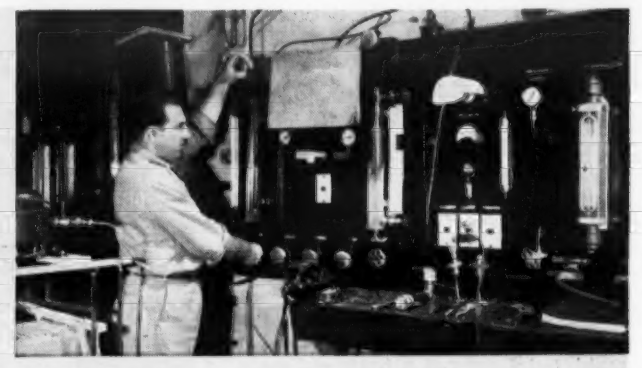
Citing codes of ethics and procedures which have become either actual laws or precedents so strong that people flout them at their own peril, he said such codes would prove criteria of satisfactory service and they could be enforced.

As an example, Nyborg said businessmen and manufacturers of nationally advertised mechanical and electronic devices are seeking ways to eliminate these sharpers. Consumer groups and government bodies also are trying to find a solution.

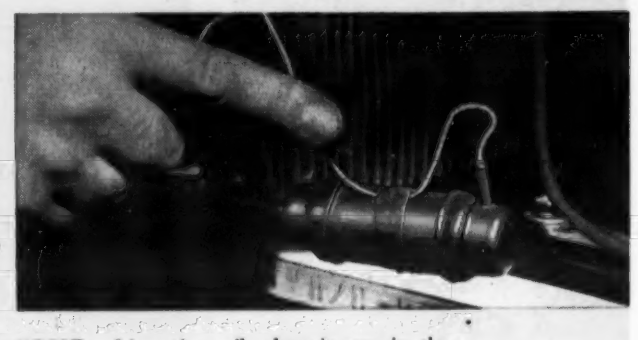
In this respect, he pointed to the effective cooperative efforts existing between Better Business Bureaus in New York City, Pittsburgh, Chicago, Boston, and other cities and the many hundreds of dealers and service organizations in setting up enforceable codes and standards in the public interest. He believes such efforts should and can be expanded.

He suggests, as a further step, that industry might prevent many unfortunate misunderstandings by instituting consumer education courses at the local level to increase the public's knowledge and understanding of the gadgets and devices they purchase and use. This also would tend to reduce the area available for racketeers in which to operate, he declared.

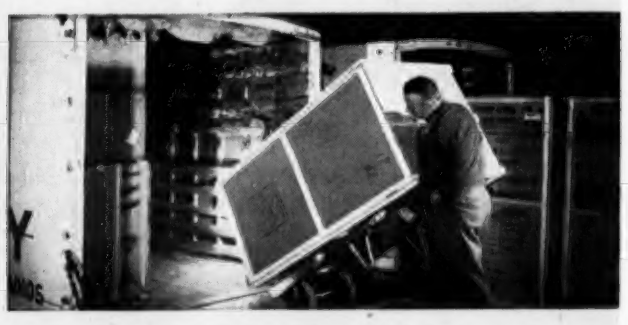




HERMETICALLY sealed compressor at extreme left receives new charge of Suniso under pressure from 55-gallon drum on floor above. The charging board measures the exact charge required, delivers it moisture-free and clean.



SOME refrigeration oils deposit wax in the capillary tubing of domestic units, requiring them to be dismantled and cleaned. Judson C. Burns prevents such costly callbacks by recharging exclusively with waxfree Suniso.



BY USING Suniso Refrigeration Oils exclusively, Judson C. Burns, Philadelphia, has spared himself emergency calls due to oil trouble. This has left him free to continually take on new contract accounts.

BECAUSE OF the reliability of Suniso Oils, units like the Crosleys being loaded on Burns' truck for delivery remain trouble-free for years. In fact, some of his units have required only routine maintenance over a period of 24 years.

TROUBLE-FREE PERFORMANCE OF SUNISO OILS HELPS BUILD BIG SERVICE-SHOP BUSINESS

For 24 years, complete reliance on Suniso has paid off for the service department of Judson C. Burns, one of Philadelphia's largest distributors. Today Burns keeps a staff of 8 commercial service men, 8 shop service men, and 4 installation crews profitably busy. They are able to service nearly 1,000 commercial and industrial units a year because they are not handicapped by a multitude of callbacks. Some units, originally charged with Suniso, have been operating since 1926 with never a trip to the shop.

Service men everywhere have come to expect such performance of Suniso Oils. Suniso Oils flow back easily to the crankcase from the cold side of the refrigeration system; they do not deteriorate and turn to gum when mixed with Freon or other modern refrigerants; being practically wax- and moisture-free, they do not clog or freeze in capillary tubes and expansion valves. For a free Suniso Specification Card, call your jobber or write Department RN-3.

SUNISO REFRIGERATION OILS

SUN OIL COMPANY, PHILADELPHIA 3, PA. • SUN OIL COMPANY, LTD., TORONTO AND MONTREAL

SUNOCO®

DRIFREEZ

Reg. U. S. Pat. Off.

Outperforms All Dehydrators by Test

Never Stores Water

Removes to 1½ oz. Physically

Neutralizes All Acidity

Prevents Corrosion and Plating

Perfectly Filtered

Units Never Require Baking By Vacuum

SAVES ENDLESS SERVICE CALLS

Tested for Safety by Engineering Laboratory

SEND FOR BROCHURE

BERNA CORP.
RICHMOND HILL 18, N. Y.

TELLING and SELLING

A GUIDE TO SMART ADVERTISING AND MERCHANDISING PRACTICES

This series of articles comprising ideas and principles for the small retail or manufacturing business is written by James D. Woolf, who was for more than 20 years a vice president and director of J. Walter Thompson Co., one of the largest advertising agencies.

By James D. Woolf

In One Day's Mail

Before sun-up this morning, my wife and numerous progeny still a-bed, I glared at my typewriter with a very considerable distaste. A Royal Portable, it's a pretty sharp instrument, but what keys to strike to say what words was what my trouble was. You see, it was time for another "Salesense"—Number 41 in the series—and here I was caught without a "message."

So I went to the kitchen and whipped up some flapjacks for myself, cut the grass, and trimmed the rose bushes. Then the mailman came. He handed me five letters, and Number 41 was practically written. A whole day's work in one day's mail!

THE FIRST LETTER

The first letter was written by a physician in Indiana, as follows:

"I once heard of a maiden lady who gave birth to a bouncing baby boy. 'Such a thing,' her minister told her, 'should never happen to an old maid.'

" 'Reverend Brown,' she replied with asperity, 'I know I am an old maid, but I am not a fussy old maid.'

"I feel that way about some advertisers. They are Christian gentlemen, to be sure, but they are not fussy Christian gentlemen."

Could be that the good doctor has something. In fact, I'm sure of it.

THE SECOND LETTER

The second letter was written by a Consulting Engineer in Atlanta, as follows:

"I hope that some day you will blast hell out of these damn singing commercials that clutter up the air from early morning until late at night. It is surprising to what extent our 'best minds' in the advertising

(. . . blast hell out of these damn singing commercials . . .)

field will go to talk down to their readers, apparently thinking that most of us are morons."

This man, I am told, is an expert in matters concerning air conditioning and quick freezing. He is not an advertiser, but his eyes are on us. The Committee on Consumer Relations in Advertising, Inc., sponsored by advertising agencies, publishers, and radio networks, some time ago interviewed 2,000 consumers on what they thought of advertising. Eighty-eight per cent took a dim view. Wonder if my Consulting Engineer was one of the dim-viewers?

THE THIRD LETTER

The third letter was from C. H. Andrews, Jr., president of the Surplus Materials Corp., Fort Wayne. About a year ago "Salesense" suggested that advertisers casting about for an effective copy theme might try this one:

"GUARANTEED CUSTOMER SATISFACTION."

Says Mr. Andrews: "I have been using it about a year—*and it works.*" Mr. Andrews is the fourteenth advertiser who has been kind enough to send me these glad tidings.

THE FOURTH LETTER

The fourth letter came from Whitt N. Schultz, a young GI who owns and operates a tidy little business in Highland Park, Ill. It gave me some information I had asked him for.

The company, Northmore's Home Products, sells things by mail—kitchen gadgets, tools for around the house, things for around the garden, and other useful and fetching items too numerous to mention. Northmore's also sells its merchandise to stores, its customers including such fine outlets as Marshall Field's, Wanamaker's, Macy's, and Abraham and Straus.

Right now the young fellow is enjoying a $100,000 volume—and his business is still in diapers. He started from zero less than three years ago on a capital of less than $1,200.

I had asked him in my letter how he did it. I have asked hundreds of successful businessmen that same question at one time or another. Whitt gave me a new answer, one that most of us believe but seldom give voice to.

"The Golden Rule," said Whitt.

"Deep down inside of me," Whitt continued, "I guess I've always wanted to be a minister. Yet I've felt I could do better outside the ministry, conducting a business in a Christian manner. I believe devoutly in giving the customer his full money's worth in goods and service."

Whitt Schultz writes his own advertising copy. He writes it without bombast, exaggeration, or hot air. His words are never sly, evasive, unfair, or cleverly misleading. He uses no superlatives, no double talk, makes no reference to competitive merchandise.

Whitt, in brief, minds his own business, sticks to his knitting, and writes his advertising in a Christian manner.

THE FIFTH LETTER

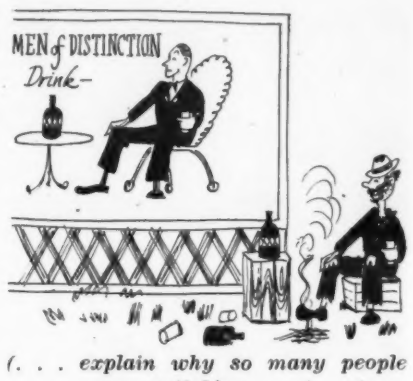
The fifth letter is from a college professor. He teaches in the School of Business in an eastern university. "It is my opinion," he writes, "that what is needed in advertising is more *how* and *why*. It seems to me that much of today's advertising puts a terrific strain on one's credulity. A great deal of it is hard to believe, because it gives the reader so little *how* and *why*.

"For example," continues the professor, "I should like to know *how* an old couple can retire in luxury in Florida on $200 a month. I should like to know *why* Colgate's is BEST when it is used after eating. Used regular immediately after eating, 'no tooth paste . . . not a single one . . . beats Listerine Tooth Paste.'

"*Why* and *how*—if Colgate's is BEST I wish the advertising would explain to me *why* so many people are 'Switching to Calverts.' And *why*, I've often wondered, do 'Men of Distinction' prefer one brand of hard liquor to all others?

"*Why* does PM have that 'clear clean taste'? Since Gillette blades are 'the sharpest ever honed,' *how* can Pal blades 'shave better' and be 'Your Best Blade Buy'?

"A couple of further questions, and



(. . . explain why so many people are switching . . .)

I'm through. Does anybody really believe that the Aqua Velva Club is really a 'Club' and one of the 'World's Foremost'?

"I was once exhorted to smoke Old Golds because there was 'Not a Cough in a Carload.' Now they ask me to smoke them for a 'Treat instead of a Treatment.' Very confusing!"

I expect the professor was one of the 88% who took the dim view on advertising.

YOUR OUTSTANDING PLUS
INTERNATIONAL HARVESTER REFRIGERATORS
COLOR-KEYED TO KITCHENS

The biggest sales-making feature in electric refrigeration since development of the ice cube! That's what International Harvester Dealers are saying about the great new refrigerators with door handle inserts that are Color-Keyed to Kitchens!

It's an unbeatable combination for top sales appeal—International Harvester quality construction . . . *femineered* refrigerators built to last a lifetime . . . and now, the feature that puts International Harvester Refrigeration dealers way out in front: "Color-Keyed to Kitchens!" Make it YOUR biggest "Plus" for '51.

For information on available dealerships, consult the nearest International Harvester District office, or write

INTERNATIONAL HARVESTER COMPANY
180 North Michigan Avenue Chicago 1, Illinois

Model HA-92: The finest refrigerator built today. Full, 9.2 cu. ft. storage. "Pantry-Dor" and built-in butter-keeper. Full-length cold. Horizontal 50-lb. freezer. Magnetic bottle-opener. Stainless steel shelves. Making sensational sales records everywhere at a suggested $369.95.

INTERNATIONAL HARVESTER

They're NEW...and YEARS AHEAD
They're *femineered*
They're *COLOR-KEYED* to KITCHENS

INTERNATIONAL HARVESTER
Refrigerators and Freezers

International Harvester Also Builds Home Freezers . . . McCormick Farm Equipment and Farmall Tractors . . . Motor Trucks . . . Industrial Power

EEI Sales Conclave To Be In Chicago April 2-5

NEW YORK CITY — A widely diversified program that will attempt to answer some of the major questions involving supply, manpower, and marketing, which face the sales executives of the electric light and power industry, will be presented at the 17th annual sales conference of the Edison Electric Institute.

The conference will be held on April 2-5, at the Edgewater Beach hotel, Chicago.

Outstanding figures in the industry, from manufacturers and utilities, will discuss the general perspective and the problems particular to each of the industrial, commercial residential markets, respectively, in the four EEI section-sponsored meetings to be held on Tuesday, April 3.

A full day home service conference will precede these activities on Monday, April 2, and will be slanted to the work of the home service directors.

Nationally prominent speakers, including Merryle Rukeyser, Dr. Lillian Gilbreth, Tom Collins, and Dr. David Guy Powers, will deal with the customer aspects of the industry at the conference general sessions, scheduled to convene on Wednesday, April 4.

Highlighting the opening day's activities will be the presentation of the Planned Lighting awards, George A. Hughes awards, Laura McCall awards, the Thomas W. Martin award, and the Frank E. Watts award.

The four-day meeting will conclude on Thursday, April 5, with the general luncheon at which Louis V. Sutton, president of Carolina Power & Light Co. and president of the Institute, and Dr. Kenneth McFarland, superintendent of schools, Topeka, Kans., will address the delegates.

Launder-King Raises Price

BASE LINE, Mich.—Launder-King Co., maker of the Launder-King portable washer with electric wringer, has raised the price of the unit from $79.50 to $89.50.

'Personalized Party'

Dealer Says Small Home Demonstration More Profitable Than Full-Scale Show

VICKSBURG, Miss. — Appliance dealers may find that home demonstrations for small groups of women sell approximately five times as many appliances per person involved as do full-scale theater demonstrations requiring a lot of money and time, according to J. E. Peterson, sales manager of Mississippi Hardware Co.

The hardware-appliance firm employs a full-time home economist, Mrs. J. W. Smoller. In addition to the usual theater-type of demonstration, Mrs. Smoller is constantly on duty in the home of Vicksburg women, presenting "personalized" demonstrations to four or five women.

Any housewife who has already purchased an appliance from Mississippi Hardware is invited to call in four or five of her friends for a "demonstration party."

If the appliance concerned is one which the "hostess" already owns, of course it isn't necessary to send out a new one. If not, the store furnishes the appliance requested.

The company furnishes all the refreshments. Amounting to about $5 for each such event, they include soft drinks, sandwiches, cake, salad, and cocktail favors.

Along with the party, the housewife is offered a worthwhile commission on any appliance sold through the demonstration. This averages around 5% on all but the more expensive appliance lines.

To date, the store has shown an extremely high sales return from each such "personalized party," and more women are actually on list, as hostesses, than can be accommodated by a single demonstrator.

OPS Calls Attention to Incorrect Example Used To Explain Regulation 7

WASHINGTON, D. C.—The Office of Price Stabilization says an incorrect example of the effect of Ceiling Price Regulation 7, the margin freeze order affecting furniture and clothing, is being widely used in explanation of the regulation.

The incorrect example used is: Suppose a retailer paid $3.00 for a shirt and sold it for $4.50 on Feb. 24, the day on which he bases his pricing chart. The retailer's margin would thus be 50%. Now, if that shirt cost him $4.00, he applies his 50% margin and charges $6.00 for the shirt. *That is not the way the regulation works.*

Instead, the price at which he can sell the shirt is the same price at which he sold any other shirt that cost him $4.00 on the "list" date.

The percentage may be entirely different.

If he did not have in stock a shirt costing $4.00 on that date, he can sell the new $4.00 shirt at the *percentage markup* of the shirt he did have costing nearest below $4.00—or the average percentage for the category (all shirts he sold), *whichever is lower.*

Thus, if he was selling on Feb. 24 a shirt costing $3.75, but not one between that and $4.00 and the $3.75 shirt was sold at a 40% markup, he could sell the new $4.00 cost shirt at a 40% markup. *However,* if the average markup of all the shirts sold by him on Feb. 24 was only 38%, the new $4.00 item could only be sold at a 38% markup, or $5.52.

The principal point to remember is that this regulation is not concerned with *identity* of merchandise but only with *cost-price relationships.*

Westinghouse Renewal Parts Moves to Ohio

MANSFIELD, Ohio—Westinghouse Electric Appliance Division has completed moving 890,000 lbs. of renewal parts from the East Springfield, Mass., plant to the renewal parts center at Newark, Ohio, reports L. K. Baxter, service manager of the division.

The move, designed to provide faster and more efficient service to dealers and distributors, will consolidate parts for all Westinghouse appliances except coolers for Coca Cola, Baxter said. He estimated the order handling time on East Springfield parts will be reduced about 67%.

The renewal parts center in Newark was established in September, 1949, to handle 150,000 parts from the Mansfield plant.

JUST ASK US!

Turn to "What's New" Page for useful information on new products.

FOR '51
COLOR is the KEY to related merchandise
Stores that sell kitchen accessories are finding that Color-Keyed Refrigerators promote the sale of related merchandise. Kitchen curtains . . . shelf cloth . . . mixing bowls . . . utensils . . . metal furniture . . . dish towels . . . wall paint . . . linoleum—all move fast when you sell International Harvester Refrigerators. They're Color-Keyed to Kitchens!
COPYRIGHT, 1951, INTERNATIONAL HARVESTER COMPANY

INSIDE DOPE

by GEORGE F. TAUBENECK

(Concluded from Page 1, Column 1)

us, contributes the following clippings to the miscellany of this column:

"Nothing is easier than fault-finding. No talent, no self-denial, no brains, and no character are required to set up in the grumbling business. Does it appeal to you?—*Rotary Bit* (Mexico, Mo.)

"The economic basis of our system is competition and free enterprise.

"Its political basis is liberty and rights coupled with democratic responsibilities.

"Its social basis is a softening of these otherwise unbridled motives by good fellowship, cooperation and fair play between all kinds and conditions of men."—*Life Ass'n News.*

Attitudes Are Changing

"Political attrition" against American industry must not be allowed to disfranchise "the votes of millions of satisfied customers" whose decisions dictate business success, according to Crawford H. Greenewalt, president of Du Pont.

"In the national interest no steps must be taken that penalize success or that discourage the efficient producer from producing," Mr. Greenewalt continues.

"We dare not hobble the willingness of a business to venture by refusing it the fruits of its success or by holding out the doubtful privilege of government regulation when that success has been achieved. We can preserve competition only by allowing it to operate, and so to make effective the votes of millions of satisfied customers.

"It is vital to the strength, happiness, and future standard of living of the people of this country that we permit the free exercise of this simple economic function.

"Small business, as such, must be encouraged to grow larger. And large business, capable of taking the great risks involved in the difficult industrial tasks, must not have its sinews weakened by political attrition. We as a nation cannot produce if the means to do so are withheld from us, and when we can no longer produce, we as a nation will lie prostrate before the world."

Du Pont has done well under a system of "free and vigorous competition" and likes it, Mr. Greenewalt reaffirms.

"Competition is a prod that keeps us continually on our toes. We think we are stronger because of it; we think we would be weaker without it. I can say categorically that our present size and our present success have not come about through a process of stifling competition by absorbing competitors. They have come through the new products and new processes that have been developed in our laboratories. The proof of that statement is in our sales figures. Sixty per cent of Du Pont sales in 1949 consisted of products that were not in commercial production in 1928—just two decades ago.

"Experience in other countries has shown that the hand of monopoly is a dead hand indeed. It profits no one, least of all the company that attempts to practice it."

Du Pont always has been "heartily in favor" of anti-trust laws, Mr. Greenewalt declares, but "unfortunately" the "ideology" of their enforcement is "left to the shifting winds of political thought."

"This has led to continuing changes in interpretation as one court decision succeeds another. Unfortunately no practical statute of limitations applies—so business frequently finds itself attacked for acts done many years ago in all good faith and with the best legal advice available."

The reponsibility of big business is to devote itself to tasks that require its full resources of manpower, finance, and talent. As examples of the exercise of that responsibility the Du Pont spokesman called attention to his company's investment of 43 million dollars in dyestuffs development before profits offset losses, to its expenditure of 27 million on nylon before the company was able to sell the first pound from a commercial unit, and to its gamble on the new "Orlon" acrylic fiber.

"We have hopes for that new product, but I must admit that we do not yet know whether it will be a sheep or a goat," he stated. "Before we find out, sometime in 1950 or 1951, we will have gambled seven million dollars in research and 15 million dollars in plant investment."

Nylon and dyestuffs proved to be profitable not only for Du Pont stockholders, Mr. Greenewalt observed, but for thousands of men and women who got jobs that never existed before and for millions of consumers whose standard of living was raised by each success.

The greatest of all big-business gambles is research itself. Not more than one out of five research dollars pays off as all entrepreneurs can testify.

Wanna Crack a Safe?

A novel use for refrigerators was introduced by burglars who robbed a Gristede store in the Bronx recently. They placed the safe containing the money inside a large refrigerator to deaden the sound, exploded it, and took the $5,000 which had been inside.

The thieves had helped themselves to a leisurely repast. The manager found a number of empty cans, cigarette stubs, and used matches scattered about the scene, together with some chisels and a hack saw.

The safe, which measured four by three feet, was completely shattered by the explosion. The strong box had been carried to the basement where the thieves apparently took many hours to open it. A small amount of cash also was missing from the cash register.

The burglars gained entrance to the store through a skylight, police believe, and jumped down onto the refrigerator which was about four feet below the ceiling.

Marriage: A committee of two on ways and means. One has her way, the other provides the means.—*Acme News.*

A doctor has discovered that radio is sometimes beneficial in cases of deafness. Deafness is also sometimes beneficial in cases of radio.

Ten Mistakes

"Ten Mistakes of Life:

"To expect to set up our own standard of right and wrong and expect everybody to conform to it.

"To try to measure the enjoyment of others by our own.

"To expect uniformity of opinion in this world.

"To look for judgment and experience in youth.

"To endeavor to mold all dispositions alike.

"Not to yield to unimportant trifles

"To look for perfection in our own actions.

"To worry ourselves and others about what cannot be remedied.

"To believe only what our finite minds can grasp.

"To live as if the moment, the time, the day were so important that it would live forever."—*United Evangelical Visitor.*

Decline and Fall?

The pamphlet, entitled "The Population Prospect In Relation to the World's Agricultural Resources," underscored two reasons why it may not be very long before some future Gibbons will be writing "The Decline and Fall of the American Republic." Those reasons are:

1. A dropping birth rate.

2. A preoccupation with luxury and ease.

Prof. Baker figures we'll have fewer people in America 100 years hence than we have now.

"Can 100 million people, let us say, living in relative luxury and with an abnormally high proportion of aged persons, keep out one to two billion people in the Orient possessing an industrial power many times greater than at present?" the professor asks.

"On the other hand, across the Atlantic a new Europe, probably consolidated by that time under one government, may well have a billion people, half or more Russian.

"Weakened by the love of luxury and ease and by a decline in the integrity of the family as an institution for the reproduction of the race," the United States will, as "a partial vacuum," be incapable of forestalling penetration by peoples "with greater love of life and children, with more thought to the future, and greater responsibility. . . ."

Personally, we think Prof. Baker is nuts. What do you think?

Tides of Opinion

Sumner Gerard, Treasurer of the Committee for Constitutional Government, writes in *Manufacturers' Record*:

"There are tides of public opinion, as there are tides in the affairs of individual men. Taken at their flood, they can lead on to reforms—reforms which pessimists despairingly believe to be impossible—or to destruction of the very bulwarks of freedom.

"It has been well said that the people's knowledge of facts should never be overestimated nor their wisdom underestimated when the facts are known. Let them be fairly and fully informed and we can depend on their verdict with confidence.

"Most potent today, and rising to ground-swell proportions, is the tide of public indignation against the abuses and tyrannies of organized labor dictators. We believe the present reaction can lead us back to freedom for the individual and to safety for American institutions—if we take advantage of that tide now.

"Because men and women in all walks of life realize that something is wrong; that a new menacing power has grown up in their country; and that they are its victims; recurring strikes, government abuse of the seizure power, rioting pickets, union leader arrogance and law defiance have sunk deep into public consciousness. Strike-bound business and strike-idle workers are thinking. At last there is a receptive attitude toward hard, unvarnished facts about 'labor.'

"We find evidence of that receptiveness in the demand for reprints by the multiple thousand of an editorial by Editor George F. Taubeneck of AIR CONDITIONING & REFRIGERATION NEWS, titled 'What's the Matter With America?' Its opening sentence is: 'Labor unions are wrecking the country.'

"This country does not need or want a Moscow-dictated super-government."

don't sell air conditioning that does

HALF a job

Available in sizes from 1½ to 20 tons

Cooling isn't enough! An air conditioner to be effective must also de-humidify. If the unit you sell isn't equipped to do *both*, you'll hear about it in endless complaints and service calls. But it can't happen with Typhoon! Excess moisture is automatically "wrung out" as the atmosphere is cooled. Typhoon units need no special "humidity control" feature. The oversize, sloping coils deliver peak efficiency under the most trying conditions. It's the key to hot weather comfort that will keep you and your customers the best of friends.

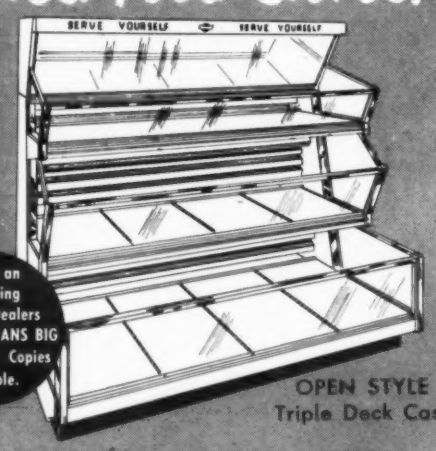
Write us for the finest dealer setup in the business.

TYPHOON AIR CONDITIONING

TYPHOON AIR CONDITIONING CO., INC.

794 UNION STREET, BROOKLYN 15, N. Y.

Serving America's Finest Food Stores!



There's an interesting story for dealers in "Bally MEANS BIG BUSINESS". Copies available.

OPEN STYLE
Triple Deck Case

...ONE OF 62 DIFFERENT BALLY MODELS and SIZES

Bally

REFRIGERATED DISPLAY CASES

Bally Case and Cooler Co., Bally, Pa.

A Good Year!

Commercial Refrigerator Distributors Show 21% Increase In Sales for 1950

PHILADELPHIA—Commercial refrigerator distributors who are members of the National Commercial Refrigerator Sales Association enjoyed a 21.72% increase in total dollar sales during 1950 compared with 1949, a survey by NCRSA reveals.

Total dollar sales in the fourth quarter of 1950 were also ahead, increasing 14.31% over the final quarter of 1949. Inventories were up sharply on Dec. 31, 1950, being 7.34% greater than at the end of the preceding year. Accounts receivable were also up 27.36% at the end of the year.

NCRSA has also announced that it is supplying members with a convenient set of tables to use in figuring profits rapidly and accurately.

"Frequently," says the association, "gross margins are improperly calculated with resultant loss. Therefore, to eliminate error in arriving at selling prices which adequately reflect costs, the three tables were developed."

The tables show:

1. The percentage of cost which must be added to obtain a given percentage of gross margin.
2. Net profit resulting from various mark-ups where percentage cost of doing business is known.
3. Method of arriving at selling price when percentage cost of doing business and anticipated percentage of net profit are used as basis.

At the present time NCRSA is conducting a survey of members to determine how they spend their advertising dollar and what mediums they find most effective.

The association has also issued a report to members covering the manner in which they compensate their commission salesmen for instalment sales. This report shows, for example, when the salesman receives credit for his commission on the sale and what adjustments are made if the merchandise is repossessed, etc.

Plan In-Plant Promotion On Ice Cream Bar Sales

WILKINSBURG, Pa.—Heavy promotion of ice cream bars in industrial plants will be begun early this year by the new organization, Automatic Food and Refreshment Co., reports Harry Rosen, president.

Rosen, who will supply Sealtest's chocolate ice cream bar to defense mobilization plants, reports the market could use five times its current supply.

To service locations, Rosen either will acquire a mechanically-operated ice cream truck, or a truck with dry-ice compartments.

Management will be told that permission to place ice cream bar machines in industrial plants can mean (1) reduction of wasted man-hours since workers can serve themselves; (2) a cut in absenteeism, because consumption of milk products tends to boost workers' resistance.

Scotch Firm Licensed to Make Universal Units

TECUMSEH, Mich. — Tecumseh Products Co. announced that it has entered into a licensing arrangement with L. Sterne & Co., Glasgow, Scotland, for the manufacture of compressors and units of the Universal Cooler Division design in the British Isles.

Formerly, the Universal Cooler Division of Newport Steel Co. had such an agreement with L. Sterne & Co. This new arrangement is a continuation of substantially the same terms as the old contract.

Under the terms of this agreement, L. Sterne & Co. has the right to manufacture the component parts of the units formerly made at the Marion plant, or any products of the Tecumseh Division which may replace those presently made at Marion. This right is restricted to Great Britain, Eire, Northern Ireland, and Scotland.

Products are to be sold under their own trade names. Sales, either as components or incorporated in complete equipment, are excluded in the United States and Canada.

Tecumseh Products will furnish engineering assistance in keeping the Sterne plant advised of any changes.

Cee-Kleer Has New Plant

CINCINNATI — Cee-Kleer Products, Inc., manufacturer of sight indicators, driers, and a combination drier and indicator for commercial refrigeration use, has moved it executive offices and factory to 947 W. 6th St., Cincinnati 3, Ohio.

Drugstore Builds Sales With Self-Serve Case for Refrigerated Biologicals

ENID, Okla.—Providing a 4-door reach-in refrigerator, at the left of the store's big veterinary supply department, from which stockmen and ranchers may help themselves to refrigerated biological drugs, has sharply accelerated sales in this profitable specialty for Evans Cut-Rate Drug Co., here.

The Tyler reach-in model is divided into four compartments, in which each shelf is labeled with the name of the drug shown, and the specific diseases for which it is recommended. For example, listed on the shelves are biologicals for controlling black leg, stockyard fever, calf scours, where cattle are concerned; cholera, boils, parasitical infections, where swine are the subject; and pigeon pox, laryngitis, and other diseases where poultry are the subject.

Each of the biological drugs is listed on one-inch white strip signs, across the front of the shelf, with the diseases behind. Thus, if the store's pharmacists are tied up with waiting upon other customers, the stockman experienced in the use of biological drugs, may simply open the door and "serve himself."

JUST ASK US

For "easy-to-get" product information . . . use coupon on "What's New" page.
Use Key No. for fastest service.

Ebco Expands Adv. Plans, Appoints New Agency

COLUMBUS, Ohio — Announcing plans for an expanded 1951 advertising program, Ebco Mfg. Co., here, reported that Geyer, Newell and Ganger, Inc., Dayton, has been appointed its advertising agency.

A. R. Benua, Ebco president, said plans call for a national advertising compaign in *Time, Newsweek, Better Homes & Gardens, House Beautiful, House & Garden,* and other leading publications.

The promotion will be supported by an intensive merchandising program, he declared. The increased promotional effort covers both Oasis electric drinking water coolers and the Oasis air drier.

To assist dealers in selling air driers, Ebco offers a sales promotion package that includes floor display material, window streamer, direct mail folders, and newspaper mats.

Bevco Buys Export Packing Div.

ST. LOUIS—In a recent move to acquire additional plant machinery, The Bevco Co., Inc., here, purchased the remaining inventory of refrigeration supplies, tools, and dies of the refrigeration division of Export Packing Co., St. Louis.

Export Packing formerly manufactured Standard home and farm freezers and milk coolers.

The company said the acquisition will increase its ability to deliver coolers to its present trade since steel and copper allotted to Export Packing now accrues to Bevco.

Nargus Food & Fixture Show Set for June 9-15

CHICAGO—The International Food & Fixtures Exposition sponsored by the National Association of Retail Grocers of the United States will fill the twin exhibit halls of the Navy Pier here June 9 to 15, Nargus announces.

Double its previous size, the exposition will run concurrently with the 52nd annual convention of the association, which is said to have a membership of 75,000 and include more than 600 local and state associations.

The two miles of exhibits will include food store products, fixtures, machines, and methods, and are expected to attract some 14,000 food field representatives.

The week of the show has been designated "International Food Exposition Week" throughout Illinois by Gov. Adlai E. Stevenson, and Mayor Martin H. Kennelly of Chicago has invited all in the food industry to attend.

All inquiries and reservations for space should be addressed to Nargus at 360 N. Michigan Ave., Chicago 1.

BRAND NEW

WILL-COOL OIL COOLER

For Machine Tools

Sold through refrigeration trade

Connect it to your own condensing unit.

MAKE MULTIPLE SALES IN YOUR OWN TERRITORY

Every Machine Shop and Factory Doing High Production Work a Prospect

Eliminates many production problems for your prospects. Specifically designed to control temperature of production machinery. Sizes to accommodate most machine tools.

Inquiries are invited

B. S. WILLIAMS CO., INC.
6 North St. Mt. Vernon 1, N. Y.

Sell today's most popular carbonator!

TOTALLY NEW IN DESIGN!

REVOLUTIONARY IN PRINCIPLE!

SUPERIOR IN PERFORMANCE!

SIMPLE TO SERVICE!

GIVES SHARP SPARKLING CARBONATION!

THE NEW Liquid TRIPLE-ACTION Atomatic

Big Profits in it for You

It's the sensation of the century—in fountains, restaurants, drive-ins, roadside stands all over this land! Every user is finding the new ATOMATIC carbonator to be the practical, low-cost answer to carbonation needs—better in every way... silent, compact, efficient, and with capacity to spare.

You can sell the ATOMATIC—this *newest* product of the world's largest soda fountain manufacturer. Liquid has a service-dealer arrangement for service men who can cash in on the big replacement market. Be posted . . . write for full information—and a copy of the complete service manual—both yours for the asking.

THE LIQUID CARBONIC CORPORATION
3110 South Kedzie Avenue, Chicago 23, Illinois

Reasons Why the ATOMATIC is Tops in Performance . . . and so Simple to Service:

PUMP—Direct drive turbine. Pump and motor are contained in same compact housing. Stainless steel motor shaft is also the impeller shaft. No belts, gears or sprockets drive the pump.

CARBONATOR BODY is solid 16-gauge stainless steel. Welded fittings form single unit to withstand 1,000-lb. pressure.

WATER LEVEL CONTROL is positive action electrode type. Starts and stops the carbonator automatically.

CHECK VALVES—Two automatic, self-flushing valves prevent a back flow of gas into pump and water line. Two pumps mean double security.

COMPACT—Unit measures only 21¼" long x 13¼" wide—14¾" high. Small enough to fit under sink section of fountain.

BASE—16-gauge drawn bonderized steel with baked enamel finish. Resilient motor mounting minimizes vibration.

Get the Facts—MAIL COUPON TODAY!

THE LIQUID CARBONIC CORPORATION
3110 South Kedzie Ave., Chicago 23, Illinois
I would like to know about the new Atomatic Carbonator.
☐ Please send descriptive leaflet and Service Manual.
☐ Also send sales proposition.
*Name*_____
*Company*_____
*Address*_____
*Town*_____ *Zone*____ *State*_____

PIZZA PIES, 5,000 of them a week, can be handled with the aid of Reco-Fab's "Frosti-Vault." By baking and freezing the pies in advance, Mary and Joseph DeNittis have built up a reputation for their Pizzeria in Baltimore.

Pre-Baked and Frozen Pizza Pies Help Build Reputation for Italian Restaurant

BALTIMORE — Pizza pies—an Italian cheese and tomato delicacy formerly known only to specialists in Italian cuisine, are finding their way to many of the dinner tables in Baltimore today.

It all started when Joseph and Mary DeNittis opened their modest restaurant some years ago on Eastern Ave. in Baltimore. The house specialty—pizza pies—"spoke for themselves" and gourmets throughout the city beat a track to the DeNittis Pizzeria.

Demand exceeded supply and so the DeNittis started to bake and freeze the pies in advance, acquiring an 18-cu. ft. freezer for the purpose.

Business mushroomed and another 25-cu. ft. freezer was acquired. Continually increasing demand made it obvious that their freezer capacity was woefully inadequate.

Then The Bell Refrigeration Sales & Service Co. of Baltimore was called in to study the process and set the DeNittis up on a commercial basis.

Now with their "Metalply" 500-cu. ft. Reco-Fab "Frosti-Vault" the DeNittis are equipped to handle 5,000 pies per week. And it looks like they'll be calling on Bell to have Reco (Refrigeration Engineering Corp.) of Philadelphia supply additional panels to expand the Reco-Fab freezer.

Refrigerated Truck Body Built for St. Louis Ice Cream Producer Eliminates Some 'Drawbacks'

ST. LOUIS—Some of the "drawbacks" to successful transportation and delivery of ice cream are reportedly eliminated in an unusual refrigerated body built for a leading ice cream firm here.

A producer who distributes a very high quality of rich butterfat ice cream in St. Louis and many surrounding cities in Missouri and Illinois, recently took a list of these "drawbacks" to Herman Body Co. of St. Louis.

Principal among the problems involved was a considerable expansion of the ice cream manufacturing plant's territory, a need for quicker service, freedom from "re-refrigeration" of return ice cream after long hauls, and elimination of condensation at various points which caused loss of appearance with expensive ice cream consignments.

More long-lasting refrigeration, doing away with sticking doors which freeze fast at various times, and insulation really proof against the sharp extremes of cold and heat in the St. Louis area were also included on the list.

Each of these was given full consideration in the design of the 550-gal. ice cream body now in use.

The body is small and light, ideal for covering small volume routes such as have opened up in suburban and small town areas. Mounted on a 161-in. wheelbase, and with lightweight auto body gauge steel, it has sufficient acceleration and flexibility to move through heavy city traffic with ease.

Standard features have been improved throughout, such as the inclusion of extra carrying space in the refrigeration compressor compartment for cones, advertising material premiums, and other items.

The steel roof of the body is heavily corrugated to provide extra strength when it is necessary to carry heavy cases of signs atop the body over long distances, plus a roof rack and ladder for the usual lighter loads.

With these basic improvements already accomplished, Herman Body continued with a separate engineering study of each problem involved, and an offset for one after another.

First, the problem of heat loss through insufficient insulation, plus high meltage of ice cream load when St. Louis' 105° summer temperature penetrated through the walls, was tackled.

The solution here proved to consist of several steps.

One of the most unusual was the extension of the corkboard—normally used as underfloor insulation only—up into the side walls of the body. Thus, the bottom of the refrigerated body is provided with an actual "cork tray" out of sight behind side panels and interior lining. Use of this vertical extension is said to have done away altogether with condensation from pocketing at the bottom of the side walls.

Sidewalls and roof are insulated with Fiberglas laid in two layers, with broken joints which prevent the spread of heat or cold from one to the other.

One of the more effective cold economizers which resulted from the Herman tests was the spacing of the Fiberglas insulation away from the sidewalls to prevent radiant heat from transferring directly to the insulation material.

Laboratory and operating tests indicated that efficiency of the insulating material was increased almost 20% by this method. The thickness of the insulation, incidentally, was six inches at most points, increased to eight at side areas where heat is likely to focus during summer operation.

The next problem, that of water vapor entering the body through the outer walls, was reportedly solved by coating the entire body shell in the interior with a rubber base sealer, applied under extreme high pressure. This has eliminated all possibility of moisture entering the insulation and causing a breakdown of glass fibers or cork granules, it is said.

The problem of frozen-stuck doors proved far less difficult to meet than those above. The mere use of all-steel doors, plus an increase in the insulation of the door frames, has produced a non-sticking door under all temperature conditions, it is claimed. The steel employed has exactly the same expansion coefficient.

In an effort to improve refrigeration, Herman Body designed its own condensing unit. Assembled in its own shops, this unit is said to be 25% less space-consuming.

The compactness of the units allows them to be mounted easily in skirt compartments without crowding, while size for size, they reportedly have 25% greater capacity. This was increased by new, high-capacity heat exchangers, while back-pressure regulation reduces service calls and repair expense.

The extra refrigerative capacity has meant that the truck can be adequately refrigerated for an extended period with a single night's "charging," and that the interior can be chilled more rapidly where needed by plugging in at relay stations.

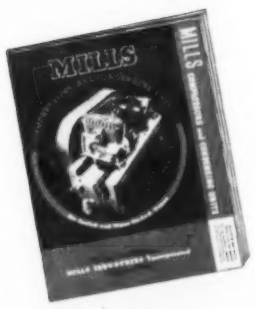
Further, it is asserted, the additional cold retention of the body allows the ice cream to remain in perfect condition over long hauls.

The body has worked out so efficiently that others of similar design are being built for other ice cream manufacturers.

WHEREVER THERE ARE REFRIGERATING, COOLING and Air Conditioning Systems

you'll find.. MILLS

COMPRESSORS AND CONDENSING UNITS



Write for new 60-page Catalog 204-1. A handy guide to help you in Condensing Unit selections.

Widely used and widely proved—MILLS Condensing Units meet operating requirements of economy and long-life dependability.

They provide sustained maximum output per size and dollar. Quietness is a result of correct design and precision manufacture. B.T.U. ratings are accurate and reliable.

MILLS Compressors and Condensing Units are made in standard capacities to meet all requirements within their range—¼ to 10 H.P., air-cooled, water-cooled and combination air- and water-cooled types.

MILLS INDUSTRIES, Incorporated • 4100 Fullerton Ave., Chicago 39, Ill.

WALL WIRE PRODUCTS COMPANY

A FOREMOST NAME IN THE MANUFACTURE OF DIVERSIFIED WIRE PRODUCTS OF SUPERIOR QUALITY

STANDARD AND LIGHT WEIGHT SHELVES OF ELECTRO-POLISHED SOLID STAINLESS STEEL

REFRIGERATOR SHELVES WITH CHROME PLATE, ZINC PLATE, PRO SEAL, TIN, OR PORCELIZED FINISH

WIRE GRILLES • DISPLAY FIXTURES • GUARDS • BASKETS OF ALL TYPES FOR ALL PURPOSES STEEL STAMPINGS • MISCELLANEOUS FORMED AND WELDED WIRE ASSEMBLIES ARC WELDED ASSEMBLIES.

WALL WIRE PRODUCTS CO.
PLYMOUTH, MICHIGAN

MR. DISTRIBUTOR DEALER

Get lined up with a good line for '51.

Farm and home freezers, commercial display cabinets, dairy cases, bottle coolers, walk-in coolers.

▼

Profit by selling the American "Aristocrat" line.

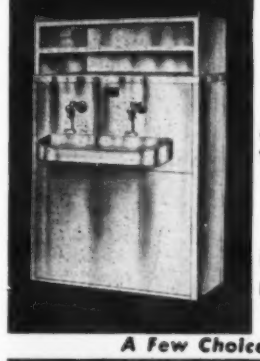
▼

AMERICAN REFRIGERATION CORPORATION
1025 E. Excelsior Avenue
Hopkins, Minnesota

Manufacturers of Coolers & Filters for over 40 Years

CAFETERIA WATER COOLERS

Stainless steel. Special cafeteria design. High capacity, super storage. Shelves, glass-fillers and/or bubblers as required.



Filtrine HIGH EFFICIENCY

Costs no more Gives much more

Service
Satisfaction
Dollar value

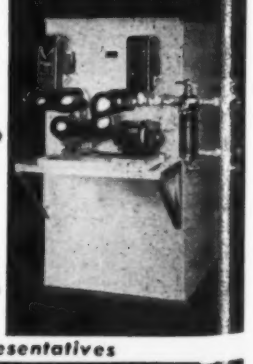
COOL, CLEAR, DECHLORINATED WATER WITH . . . . .

FILTRINE FILTER-DECHLORINATORS

Eliminate tastes, odors, foreign particles. Promote cooler satisfaction — dealer sales.

INDUSTRIAL PROCESS COOLERS

Temperatures to 34° — sustained as set. Special features for bakery, bottling, other processes. Rugged construction.



A Few Choice Areas Open for Factory Representatives

FILTRINE MANUFACTURING CO.
53 LEXINGTON AVE., BROOKLYN 5, N.Y.

Refrigeration Used In 3 Steps of Milk Recombining Process; Makes Possible Whole Milk for U. S. Troops In Far East

YOKOHAMA, Japan—Aided by refrigeration, milk recombining plants in Japan are supplying military establishments with a product that is a far cry from the pale, chalk-like substance served American troops overseas in World War II.

The milk is the result of a unique if not revolutionary process developed by the Quartermaster in cooperation with the entire dairy industry. Refrigeration enters the picture at three points: when butterfat used in the process is frozen, during the pasteurization phase, and in the bottling procedure.

Produced at plants of International Dairy Supply Co., the milk is furnished to all Army and Air Force installations, as well as Post Exchange snack bars and authorized officers' and enlisted men's clubs. The plants were established on a contract basis by the Quartermaster Section, Japan Logistical Command.

PROCESS IN OPERATION FOR TWO YEARS

The process was explained by W. P. Merrill, who has been managing the operation of one of these plants for the past two years with the help of H. F. Bode and 47 Japanese technicians.

First step is to re-chlorinate the water. Then it is pumped through a precipitation filter containing ferrous sulphate.

From there it goes through a sand and gravel filter to remove any remaining solids, and on through a charcoal filter to remove the chlorine taste. Next, it is pumped into a storage tank, and by this time it is as pure as water can possibly be.

From the water storage tank a measured amount of water is pumped into a 300-gal.-capacity pasteurizing vat. Meanwhile, a dairy technician in an enclosed room pours an exact amount of milk solids through a funnel into a strong pump which thoroughly blends the water and milk solids.

MILK SOLIDS FROM PACIFIC COAST AREA

These milk solids come entirely from the Pacific Slope area of California, Washington, and Oregon, and from the Great Lakes region.

While the vat is being filled with the water and milk solids, more technicians are putting just the right amount of butterfat into the vat to give the milk richness and flavor. This butterfat looks like melted butter and is 99.8% pure butterfat. It is frozen and shipped from America in 5-gal. tins.

When all these ingredients have been added in the proper amount, pasteurization begins. Large stainless steel agitator blades revolve constantly and the milk is heated to 143° F. and held for 30 minutes.

At the end of this time, the milk is pumped through a homogenizer which breaks up the fat globules to within one tenth of their normal size and thoroughly mixes the milk so that the last drop from a glass is as rich as the first one.

From the homogenizer the milk is pumped to a 5-ft. tower stainless steel cooler. As it flows down over the cooling coils the temperature is reduced from 143° F. to 34° F. in a matter of seconds. From here the milk is pumped into stainless steel storage tanks and held in readiness for bottling. Pasteurization is now complete and the next step is to put the milk in sanitary milk containers to protect all the milk's richness.

BOTTLING MACHINE A HIGHLIGHT

The bottling machine is one of the major highlights of the plant. A technician literally feeds this machine flat cardboard cartons at the rate of one each second. The machine takes these pieces of cardboard, forms them, and glues the bottoms securely so they won't leak.

Then the container is immersed in a bath of paraffin which is 180° F. After this bath, the containers are cooled quickly by mechanical refrigeration.

Then they pass into a chute where the intricate tops are formed and made ready for receiving milk. This done, the container is filled with milk by piston-like plungers which meter out exactly the amount of milk required.

Next, the bottle is sealed by pressure and stapled for additional protection. As this machine's crowning achievement, the bottle is dated with a code mark so that suppliers can rotate their milk, thus guaranteeing the consumer the freshest possible product at all times.

Each phase of all these various operations is under the constant supervision of Army Veterinary Corps representatives and International Dairy Supply Co.'s trained technicians.

Every single piece of equipment is disassembled every day at the end of the processing, washed and scrubbed with soap, and rinsed. When the equipment is reassembled, everything is sterilized with live steam.

The plants make chocolate milk, can make cream and buttermilk, and produce ice cream in three sizes of packages and in several different flavors.

Supervision of the plants is exercised under over-all policies of the Quartermaster Section, Japan Logistical Command. In addition to its occupation mission, the Japan Logistical Command, Maj. Gen. Walter L. Weible commanding, is responsible for logistical support to United Nations Forces in Korea and the occupation troops in Japan.

Cut Flower Storage

30-32° Temp., Proper Circulation, and Moistureproof Packages Preserve Flowers Out of Water

ITHACA, N. Y.—Cut flowers may be held for several weeks in moistureproof packages without water if the temperature is maintained at 30° to 32° F. with proper air circulation.

These findings, which give promise of easing some of the risks in the retail florist business, were suggested by research conducted at Cornell university, according to the Refrigeration Research Foundation.

Despite its being a billion-dollar business in this country, floriculture has not kept pace with other phases of agriculture such as apple production and storage, contends Dr. Charles W. Fischer, Jr., of Cornell's Department of Floriculture and Ornamental Horticulture, who has been studying the problem.

Successful long-term storage would be a boon to the retail florist, whose business is seasonal with high holiday demands and prices and considerable risk due to unpredictable weather. Improved efficiency, reduced losses and waste, simplified timing, with resultant increased sales at more uniform prices would be the logical outcome if storage were prolonged, it is believed.

Trials at Cornell, says TRRF, have shown no such effects as "sleepiness" in carnations or "bluing" in roses when held at 31° F., nor any damage with peonies, pompons, lilies, or lilies-or-the-valley. The only exception was the orchid, which showed breakdown at temperatures below 42° to 45° F.

No freezing was observed during the Cornell experiments where temperature was held constantly in the narrow 30° to 32° F. range. It appears, however, that air circulation is required to prevent cold spots as well as hot spots, according to TRRF.

As for packaging of the cut flowers without their stems in water, it was found that film wrappings such as DuPont 300 MSAT 86 and 450 K 202 were best.

Storage life was increased two or three times the usual with the temperature at 30° to 32° F., it was reported, but the added effect of dry storage as opposed to keeping the stems in water, is not exactly known as yet. Carnations, pompon chrysanthemums, and some garden lilies have been held for a month, roses three weeks, peonies for several months.

According to TRRF's report, the quality of the flowers after storage appeared normal, with roses lasting five days, carnations seven, and pompons as long as 10. Upon removal from storage most of the flowers tested were placed in water containing "Floralife."

Possibilities of bulk storage in large packages for several weeks to meet holiday and seasonal demands offer the greatest potential, TRRF believes. Metal or waxed drums might be employed, and combined with dry storage would result in saving of space and greater convenience.

LOOK to LARKIN

for Durability

THE ORIGINAL, PATENTED
CROSS-FIN COIL

The refrigeration coil that changed an industry stands today unchallenged for performance, user satisfaction and lasting durability. Made from only the finest materials by skilled craftsmen under exacting standards, every Larkin Coil features imbedded fin-to-tube contact, swaged connection, silfos welded construction, and staggered tubing. Write for complete details.

Manufacturers of the original Cross-Fin Coil — Humi-Temp Units — Evaporative and Air Cooled Condensers — Air Conditioning Units and Coils — Direct Expansion Water Coolers — Steel Vacuum Plate Coils — Heat Exchangers.

WATCHDOG OF THE NATION'S FOOD SUPPLY

LARKIN COILS

519 MEMORIAL DR., S.E. • ATLANTA, GA.

MORE INFORMATION?
Use Handy Coupon
on "What's New" Page
of this issue.
Use Key No. for fastest service.

Serving America's Finest Food Stores!

SUPER MARKET
Top Display Case

...ONE OF 62 DIFFERENT BALLY MODELS and SIZES

Bally

REFRIGERATED DISPLAY CASES
Bally Case and Cooler Co., Bally, Pa.

for long, trouble-free globe valve service... specify SUPERIOR

You get longer lasting, trouble-free service when Superior's new Bolted Bonnet Globe Valves are part of your refrigeration picture. They are designed for simple reseal when disassembled for soldering and for easy access to internal parts—plus a Suprex seat which assures a quick, positive shut-off. All this adds up to greater savings in time and money for you. Superior packed Globe Valves are engineered to fit all your needs—sizes from 7/8" OD to 4 1/8" OD.

See your local wholesaler soon—he has them in supply.

Superior valve and fittings co.

1509 West Liberty Avenue Pittsburgh 26, Pa.

They'll Do It Every Time . . . . By Jimmy Hatlo

LOOKA THAT! LOOKA WHO'S GETTIN' ALL THE CREDIT AN' I DO ALL THE WORK! I DO EVERYBODY'S WORK AROUND THIS JOINT... BUT WHEN THE BOUQUETS ARE PASSED OUT I DON'T GET A SMELL... WHY, I EVEN BROKE THE BOSS HIMSELF IN ON THE JOB...
POOR OL' UNAPPRECIATED DRONEBERRY IS SINGING HIS OLD REFRAIN AGAIN... WHAT WOULD THE FIRM DO WITHOUT HIM? DON'T ANSWER THAT!
THE HARDEST JOB HE EVER DID WAS TRY TO LOOK BUSY... HE'S SO ANXIOUS FOR A LITTLE CREDIT HE BUYS ALL HIS SUITS ON TIME...
WHO INTRODUCED THE BOSS TO THE GAL WITH THE MILLION BUCKS AN' THE STOP-LIGHT FACE? DOES DRONEY CLAIM THAT ONE?
SOMEBODY OUGHT TO START DRONEY OFF... HE WHO KICKS MOST MAKES THE BIGGEST RUT...
JIMMY HATLO
LISTENING TO THE OFFICE BEEFER BURN...
THANX TO SOL MARKOWICZ BYBERRY APTS., BYBERRY RD. AND BLVD., PHILADELPHIA, PA.
1-30
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Do You Have 'Both Feet On The Ground'?

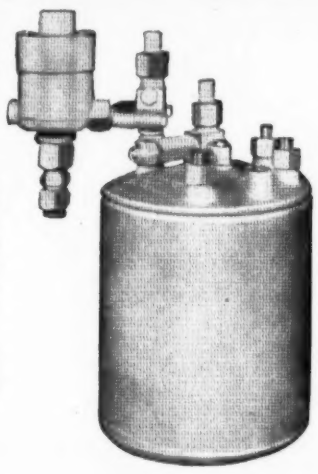
INSTANTANEOUS . . .

TEMPRITE

WATER COOLERS
BEVERAGE COOLERS
CARBONATORS
ACCESSORIES

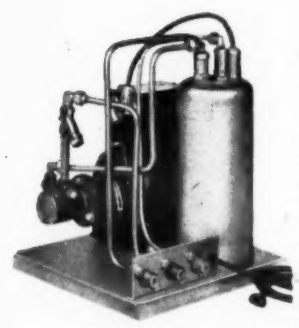
WATER & BEVERAGE COOLERS

Compact Temprite water coolers operate on patented *instantaneous cooling principle*. There's a Temprite model for the smallest to the largest commercial or industrial application. *Adaptable for use with carbonated beverages and many other special liquids.* Constructed entirely of non-corrosive materials.



BEER COOLERS

Actually cool up to 3 kinds of beer plus carbonated water and plain water in the same cooler at the same time. Patented control maintains perfect drinking temperature under heaviest loads and protects against needless draught beer waste. All stainless steel coils are easy to keep clean and high tensile strength offers safety and permanency. Beer coolers are obtainable with or without the outside water and soda water cooling coils if desired.



CARBONATORS

Temprite Automatic Carbonators will deliver as many as 6450 glasses of highly carbonated water from a single 20 lb. tank of CO^2 gas. No loss of CO^2 gas through purges or vents. Gives peak carbonation at lowest CO^2 gas pressure.

Shown is the completely self-contained packaged unit. Temprite Carbonators are also available for remote installation of the pump, motor and relay assembly; and a Cooler-Carbonator assembly is offered which will cool and carbonate water at the rate of 300 glasses per hour, at a constant 40 degree temperature.

EQUALIZER TANKS

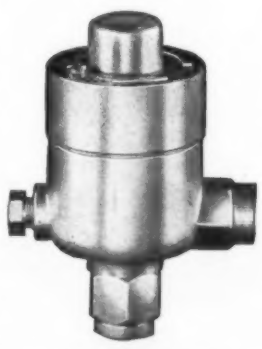
Prevents short cycling of condensing unit and permits temporary overloading of cooler without passing load directly on to compressor. Recommended in all Temprite installations except in large duplex systems. Made of cold rolled steel, electrically welded, pickled and neutralized; thoroughly cleaned and dehydrated. Aluminum finish. Approved by Underwriters.

TWO-TEMPERATURE VALVES

Provide a wide range of adjustments and close temperature control. Essential to the multiple type refrigeration system, the Temprite 2-Temperature valve is also used on single applications where closer and more constant regulation is required than can be furnished by the condensing unit control switch.

Of the throttling type, these valves begin to close as the cooling unit approaches its required low temperature. The amount of refrigeration is thereby reduced, and all cooling units in the system reach their cut-out point about the same time, thus maintaining a better balance in the system.

Five models are available for use with Freon, SO_2 or Methyl Chloride refrigerant in capacities up to 250,000 B.T.U. Rugged construction, accurate control, and low pressure drop across the valve insure long life, satisfactory operation.



OIL SEPARATORS

In capacities from 1/6 H.P. to 50 tons; removes over 98% of oil from the refrigerant gas along with dirt, scale, core sand, etc. Keeps oil in compressor, away from condensor, expansion valve, and evaporator coils.

Permits the refrigerant to boil at its true boiling point. Heat transfer is increased up to 20%, thus evaporator temperatures from 4 to 7 degrees lower can be reached at no increase in operating time.

Adaptor blocks are available to facilitate installation into systems up to 5 tons. Installed between head of compressor and discharge shut-off valve. Studs, bolts and gaskets included as a complete assembly.

Distributed in Canada by Refrigeration Supplies Company Ltd., London, Ontario

TEMPRITE PRODUCTS CORP.
ORIGINATORS OF INSTANTANEOUS LIQUID COOLING DEVICES
P. O. BOX 72-G, EAST MAPLE RD.
BIRMINGHAM, MICHIGAN

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AIR CONDITIONING AND REFRIGERATION News

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"I have always felt that whatever the Divine Providence permitted to occur I was not too proud to report. The people are not served by pussyfooting, or by that sort of journalism in which nobody will ask who is the editor of a paper or the writer of an article, and nobody will care."—*Charles A. Dana.*

The Home Freezer Is a Defense Weapon!

A LOT OF EYE-WASH has been spilled over the pages of local and national newspapers and magazines recently about what would happen in case of an atomic attack on our cities.

The resulting picture has been, at best, gruesome. The oft-repeated conclusion is that we need a strong civilian defense force and detailed plans of action for emergencies.

Though such plans seem to focus on the need for hospitals, blood banks, auxiliary police, and the more spectacular requirements, may we humbly suggest the *home freezer* as a potent defense weapon?

The quietly working home freezer that is now dispersed through millions of homes and farms throughout the country could be the real Minute Man in the event of an attack on our cities.

Picture this scene, if you will.

Metropolis, U. S. A., was bombed last night (not even atomic). The bombs, dropped with uncanny accuracy, did considerable damage to railway yards and power plants. Early estimates are that it will take two or three days to get all facilities operating.

Civilian casualties were not heavy, but fear is widespread that the bombers may return at any time to give the city another shellacking.

Many of the more jittery are leaving the city, seeking haven in the countryside.

Due to the damage to the railway yards, freight traffic is tied up. Food supplies to the city are immediately cut considerably below normal. Truckers also are having trouble moving food to the city due to the general confusion and choking of the highways.

Though the power loss is not general, several areas of the city are without electricity.

In this situation, wouldn't the home freezer be a real friend and front-line soldier?

People get hungry every four or five hours. Without food their efficiency, morale, and determination rapidly deteriorate.

Caught unawares in this fashion, some families might find themselves hungry very soon. With grocers' shelves emptying fast, they would have to call on friends or neighbors for help. The neighbor with a well-stocked freezer would be a real hero!

If the freezer owner happened to live in an area where power had been lost, he could be confident that his food supply would be safe for two or three days in the home freezer. His aid would be invaluable!

Farmers and suburbanites to whom refugees flock would find their freezers a very important asset when receiving "unexpected company." A real housefull could live for several days in relative comfort with 300 or 400 lbs. of frozen food to draw on.

Even with the relatively few freezers already installed and operating in any one community, consider how much they would relieve the strain on transportation facilities.

By providing a readily available source of food to freezer owners and their friends, they reduce sharply the amount of food that must be imported. Thus, they free that much more freight space for other emergency requirements, such as medicines and hospital supplies.

As a real defense weapon, the value of the freezer should not be overlooked by civilian defense planners. The more freezers that are sold and properly used, the stronger our country will be whenever a crisis strikes—whether in war or peace.

Small Business In Defense Work

Contracts Won't Come as 'Handout' But Small Firms Can Obtain Help Through Gov't Channels; Must Prepare to 'Sell' Facilities

WASHINGTON, D. C. — There's been a lot of talk in recent months about all the aid small business can expect from the Federal government in obtaining defense contracts.

But small firms—particularly manufacturers—shouldn't get their hopes too high. For one thing, a Federal official points out, there just aren't enough materials for all civilian goods producers. And many little shops obviously can't be used for defense work.

Nevertheless, there are some things the "little guys" can do, according to government people, to better their chances of staying in business.

Regarding material shortages, the first step is to check and re-check every source of supply—both regular and potential. If this proves fruitless, get in touch with the nearest of the 93 Department of Commerce field offices, which also serve as field offices of the National Production Authority.

Whom To Contact In Gov't

If there is no such office within a reasonable distance, contact P. A. Bennett, acting chief of the Special Assistance Section of the Office of Small Business, U. S. Department of Commerce, Washington 25, D. C.

This office has been able to help some firms. For example, a manufacturer of automobile battery cables protested that it would be forced out of business by the NPA's copper order (M-12), which limited it to a 60-day copper inventory.

Because of the seasonal nature of its business, the company explained, it was necessary to buy heavily from April 1 to Oct. 1 and live off the inventory after that.

When the NPA agreed in principle with the company's complaint, Bennett's office helped the manufacturer prepare a formal application for permission to carry a larger inventory. The application was approved. Then Bennett's staff helped the company locate suppliers of copper.

Such assistance is the exception, rather than the rule, however. Most small firms hard hit by NPA material-limitation orders must rely on obtaining defense contracts, ordinarily, to survive.

There are two possibilities here, of course—prime contracts and subcontracts. Regarding the former, the Munitions Board said recently that small firms will do a still larger volume of business as prime contractors in fiscal 1951 than they did in 1950 ($1,310,000,000 in military supplies, services, and construction).

Shooting at Prime Contracts

So how to go about seeking prime contracts? Naturally, the first thing for a company to do is to answer the question: "What can we make that the government is buying?"

Small firms can act as prime contractors principally for the commercial types of products needed by the military, rather than the specialized types of heavy combat equipment, the Munitions Board notes.

What the government is buying can be learned by checking the "Synopsis of Procurement Information" issued daily by the Commerce Department. These lists are made available at 6,000 locations in the 48 states, including the department's field offices and offices of civic and business institutions, such as local Chambers of Commerce.

(Data from the lists pertaining to the air conditioning and refrigeration industry are published each week in the NEWS.)

How To Keep Informed

But a large percentage of government contracts are awarded as the result of negotiation, rather than on an advertised bid basis. Companies which want to go after this business should take the following steps:

1. Prepare a list of products which they can make and which they think the government will purchase.

2. Compose a description of the company, including the names of officers, location of plants, amount and capacity of machinery, number of workers and their skills, financial resources, and previous experience (if any) with government work.

3. Send the product list and company description to the Central Military Procurement Information Office, Room 3-D-760, the Pentagon, Washington 25, D. C. Ask this office to send a list of the military purchasing offices in the company's area which may be interested in buying its products.

4. When this list is received, send to each purchasing office a letter enumerating the products the company can make which they are buying. Along with the letter, send a couple of copies of the above-noted company description.

These steps should result in a company receiving bid invitations from the military purchasing offices contacted. Then, when these offices are negotiating a contract they think the company may be able to handle, they should call in company representatives. A personal visit to these offices may solve any special problems.

Procedure on Subcontracts

Small plants, however, the government stresses, will find their greatest opportunity to participate in military production as subcontractors. They are not equipped to act as prime contractors for large and complicated military products, such as ships and aircraft, artillery and tanks, or combat vehicles and trucks.

"These types of munitions will represent an increasingly larger proportion of military purchases in the future," the Munitions Board states.

Small manufacturers desiring to act as subcontractors will have to contact prime contractors themselves. They can find out which companies in their area are getting government contracts by studying the Commerce Department's weekly "Synopsis of Contract Award Information"—available in the same places as the daily procurement lists.

But whether after prime contracts or subcontracts, small firms must take the initiative in selling their services. As the Munitions Board puts it:

"The capacity of small enterprises will be used most effectively in the defense program if they follow their peacetime slogan for doing business, which is to 'Go Out and Sell.' "

Airtemp Gets Contract To Make Range Finders

DAYTON — Airtemp Division of Chrysler Corp., manufacturer of air conditioning and commercial refrigeration equipment, has received a contract to make a large number of range finders for the armed forces.

The government contract will probably require expansion of the Airtemp plant here, it is stated.

Refrigeration Equipment Helps Goodrich Increase Cold Rubber Production

CLEVELAND—Production of cold rubber at the Port Neches, Tex., plant the B. F. Goodrich Chemical Co. operates for the government will be increased 50% within 60 days, W. I. Burt, vice president of manufacturing, announced here.

He said the government has authorized the installation of refrigeration equipment costing $350,000 to expand cold rubber production from 30,000 to 45,000 tons of the plant's 60,000-ton annual rated capacity. At present, he pointed out, the Port Neches units are operating in excess of 135% of their rated capacity.

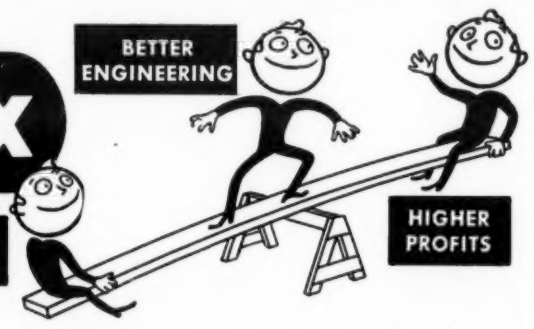
The Goodrich plant is the first of the government-owned, industry-operated man-made rubber facilities to receive authorization to increase the nation's cold rubber supply, he said.

Cold rubber is produced at 41° F., Burt said, compared with 120° F. used in the standard GR-S process. This type of rubber possesses greater resistance to abrasion than standard American rubber or crude rubber and is used primarily in passenger car tire treads to give increased mileage, he explained. B. F. Goodrich also has used cold rubber in the production of some conveyor belts.

NEW PRODUCTS?

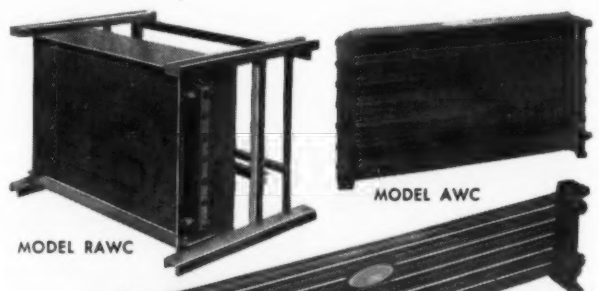
Turn to "What's New" Page for useful information on new products. Use Key No. for fastest service.

heat-x



Keep the see-saw balanced in your favor . . . let Heat-X equipment help to keep your costs down, your profits up. Heavy duty refrigeration and air conditioning equipment generally means heavy installation and operating costs. Smart refrigeration engineers (and salesmen) know these points are important in comparing the economies of one system to another.

The Heat-X water cooled condensers and combination air-and-water cooled units provide a high level efficiency independent of summer weather peaks.



Shell-and-coil condenser-receivers are constructed of seamless steel tubing with ample cooling coils generously sized for efficient performance.
Investigate these Heat-X products — you'll be glad you did.

WRITE DEPT. AC FOR SPECIFICATION SHEETS

THE HEAT-X-CHANGER CO., INC.
250 East 43rd Street, New York 17, N.Y. • Brewster, N.Y.

NOW...
AN EVEN MORE LIBERAL
5-YEAR PROTECTION PLAN
FOR SERVEL SUPERMETIC
SEALED CONDENSING UNITS

Here's the kind of profit news you've been waiting for. Servel's FIVE-YEAR Protection Plan has been extended beyond the fractional hermetic line to include the new *steel-case* 1 HP models.

Dealers and service engineers can now look to even bigger sales records in 1951 . . . more money-making opportunities. Prospects are easy to sell when they are offered a genuine FIVE-YEAR warranty to back up their refrigeration investment. Servel's new, liberal protection plan is available with all Servel Supermetic sizes from the smallest models right up through the new *steel-case* 1 HP line.

Manufacturers are enthusiastic about Servel's new warranty policy because it means distribution can be further broadened. It offers the assurance that users of fixtures "Powered by Servel" will enjoy trouble-free, economical performance of their condensing unit equipment. Manufacturers are relieved of field service problems.

Servel's nation-wide network of authorized parts suppliers carry ample stocks of all necessary replacement or exchange requirements. Dealers and service engineers deal directly with these conveniently located parts depots. Servel's new warranty plan requires no cash deposit on any defective parts exchange. User satisfaction and goodwill can now be fully protected. Where installations involve larger condensing unit models, Servel offers a warranty that provides replacement parts for a full year.

FOR COMPLETE INFORMATION . . .
WIRE, WRITE OR MAIL THIS COUPON

Servel
SUPERMETIC
Models for every electric refrigeration and air-conditioning use . . . 1/5 to 5 H.P.

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COMPANY_____
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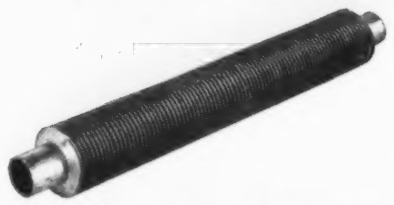
For efficient heat transfer

"Ro-Fin" Tubes



There are nearly 100 sizes of Rome Extended Surface Helical Fin Tubing in production . . . with or without threaded end connections, or to be used with standard flare connections.

Write for information on your heat transfer problems:

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TURNEY RADIATOR COMPANY

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AIRO *stands for*

Fast, dependable, world-wide service.

Refrigeration and Air Conditioning parts and supplies.

Write for current Catalog

AIRO SUPPLY CO.
2732 N. Ashland Ave., Chicago 14, Ill.

Current Literature Available

To obtain further information on the literature listed below, please refer to key number preceding listing. Please use the "Information Center" form on "What's New" page.

Fischer & Porter Issues Valve Sizing Charts

——KEY NO. M-330——

HATBORO, Pa. — A steam valve sizing chart covering the range from 1 to 1,000,000 lbs./hr. and a butterfly valve sizing chart covering the range of 15 to 10,000 g.p.m. have just been published by the Fischer & Porter Co., here.

Copies can be obtained free of charge upon request.

Anheuser-Busch Booklet Shows Ice Cream Cases

——KEY NO. M-331——

ST. LOUIS—Under the title "Mark of Excellence," Anheuser-Busch, Inc. here has issued a 20-page booklet on its new line of cabinets for ice cream.

The booklet pictures and describes each model, gives a cross-sectional explanation of the cabinet's features, and shows the manufacturing processes through which the cabinets go.

Copies are available on request.

Standards Association Publishes Safety Code

——KEY NO. M-332——

NEW YORK CITY — To protect workmen from escaping gas, vapor, or mist involved in open-surface tank operations, a new American Standard Safety Code has just been approved and published by the American Standards Association.

It is the American Standard Safety Code for Open-Surface Tanks, Z9-1-1951.

Operations involving the immersion of materials in liquids and their subsequent removal are covered in this code. These include electroplating, washing, anodizing, pickling, quenching, dyeing, dipping, tanning, dressing, bleaching, degreasing, alkaline cleaning, stripping, rinsing, and digesting.

The standard classifies open-surface tank operations into 12 classes depending upon the relative need for controlling the gas, vapor, or mist rising from the tank. Tables are included to allow classification of any open-tank operation from a knowledge of the tank temperature; the boiling point, flash point, and relative evaporation rate of the liquid in the tank; the maximum allowable concentration in the air of the vapor or mist produced; and the extent that the operation produces mist. Ventilation requirements vary with the need for control as indicated by the classification.

The standard stipulates for each "class" a minimum control velocity for enclosing hoods with one or two open sides; for canopy hoods with three or four open sides, and for lateral exhaust with no hood over the tank.

The procedure is also outlined for computing the ventilation rate (in cubic feet of air per minute) required to maintain the necessary control velocity for each hood type.

This standard is a revision and expansion of the American Standard Safety in Electroplating, Z9-1-1941.

Work on the code was sponsored by the American Industrial Hygiene Association, the American Society of Heating and Ventilating Engineers, and the National Association of Fan Manufacturers.

Copies of the code may be obtained from the American Standards Association, 70 E. 45 St., New York 17, N. Y., at 75 cents a copy.

McQuay Books Cover 3 of Its Products

——KEY NO. M-333——

MINNEAPOLIS—Three new bulletins were recently published by McQuay, Inc., here.

Bulletin No. 108 gives complete information on the firm's Icy-Flo accumulator that stores cooling capacity for air conditioning. Included in the eight-page booklet is information on how to use the accumulator, its specifications, technical data on selection of proper size, schematic layouts of typical applications, and a diagram of the unit.

Bulletin No. 322 covers horizontal unit heaters giving specifications, basic steam and hot water ratings, quietness ratings, application data, and roughing in dimensions.

Bulletin No. 760 gives the same information on the McQuay line of down flow unit heaters.

MORE INFORMATION?
Use Handy Coupon on "What's New" Page of this issue

2 Westinghouse Books Aid Ad Coordination

——KEY NO. M-334——

MANSFIELD, Ohio — To help its major appliance dealers coordinate local radio and newspaper advertising with national promotions, two new advertising booklets are now being issued by Westinghouse Electric Appliance Div.

One is a 32-page booklet that illustrates and lists 128 cooperative newspaper advertisements for retailer use. The advertisements are in sizes for all types of retailer budgets and schedules, and cover refrigerators, ranges, Laundromats, clothes driers, dishwashers, water heaters, and garbage disposers.

The other is a 12-page booklet presenting 90 radio commercials on the full line of Westinghouse major appliances. The commercials are 60 seconds and 20 seconds in length.

4-Page Bulletin Covers Aqua-Therm Towers

——KEY NO. M-335——

DAYTON — A four-page bulletin describing cooling towers designed and manufactured by Aqua-Therm, Inc., here, is available.

Distinctive feature of the cooling tower is the packing bed of Berl Saddles, heretofore used primarily in scrubbing towers, according to the company. These corrosion resistant ceramic saddles are said to provide greatly increased surface area in relation to total volume.

The bulletin also describes how the use of saddles permits reduction of tower heights and pumping horsepower up to 50%. In addition, technical data and a specimen cooling tower problem are presented.

Sheet Explains Use of Tricyclodiene Solvent

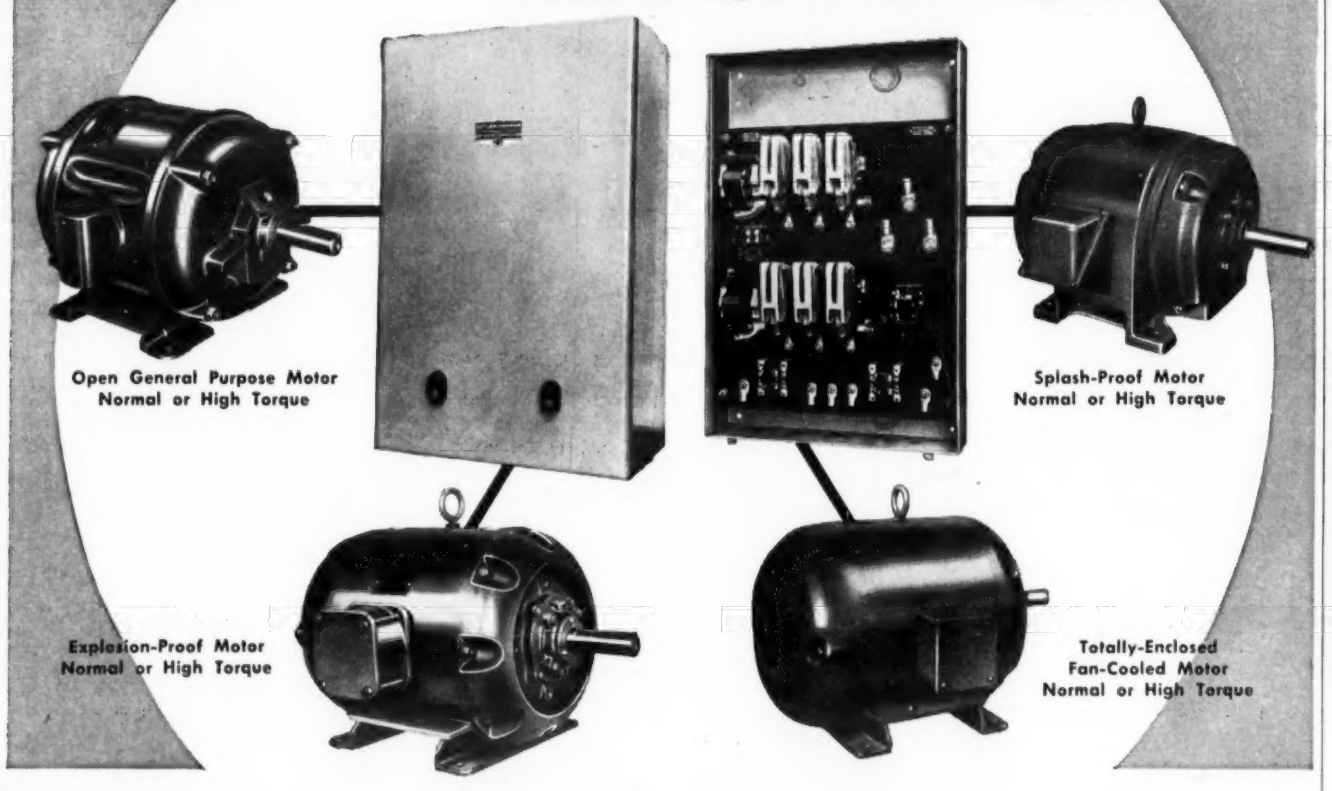
——KEY NO. M-336——

PHILADELPHIA — A descriptive sheet on its new metal degreasing solvent called Tricyclodiene has been published by the Technical Processes division of the Colonial Alloys Co. here.

The sheet tells how the solvent can be used and how to get samples.

Wagner®
ELECTRIC MOTORS
...the choice of leaders in industry

Wagner
Increment Motor and Starter Combination
...most economical for applications where reduced starting current draw is required



easy does it...

You can meet locked current restrictions by limiting the in-rush of motor current during the starting period with the low cost Wagner Increment Motor and Starter "Package". This motor and control combination is excellent for use on any application where reduced current draw at start is required.

Wagner polyphase motors, both normal and high torque, are wound with two circuits in parallel. When the increment starter is operated, its first magnetic contactor closes and puts half of the motor winding across the line, so that the motor draws only approximately 60% of its normal locked rotor current from the line. At the same time the circuit is closed to an adjustable pneumatic timer and at the completion of the timing cycle the second magnetic contactor closes, putting the second half of the winding in parallel with the first.

The Wagner Increment "Package" is economical to install, and makes possible the use of high grade magnetically operated equipment at a low purchase price.

Why not investigate this Wagner combination today? Write for full information.

Consult the nearest of Wagner's thirty-one branch offices, in all principal cities, for expert advice on your motor application problems.

WAGNER ELECTRIC CORPORATION
6441 Plymouth Ave., St. Louis 14, Mo., U.S.A.

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ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES
AUTOMOTIVE BRAKE SYSTEMS — AIR AND HYDRAULIC

BRANCHES IN 31 PRINCIPAL CITIES

MSI-7

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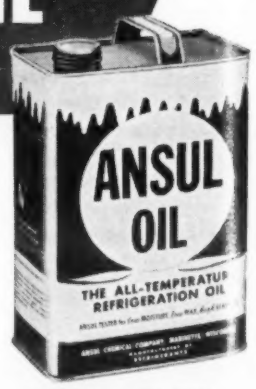
ANSUL Refrigerants

Liquid Sulfur Dioxide by ANSUL
Liquid Methyl Chloride by ANSUL

ANSUL OIL



DRYNESS is a critical requirement in the specifications of ANSUL Refrigerants and ANSUL Refrigeration Oils. To safeguard the dryness of Ansul Refrigeration Products, specially designed container-drying and product-dehydrating equipment is used to eliminate the last trace of moisture.

Moisture in refrigeration systems results in the formation of ice, rust, sludges, and contributes to the development of other impurities and complications. These seriously interfere with the proper operation of a refrigeration system.

ANSUL Technicians have prepared a series of bulletins on the effects of moisture and other foreign matter in refrigeration systems. Copies may be obtained from ANSUL wholesalers or by writing directly to Ansul Research.

ANSUL 150 OIL —

The All-Temperature Refrigeration Oil—is sold by leading refrigeration wholesalers everywhere. (If you require a higher viscosity oil ask for ANSUL 300.)

ANSUL CHEMICAL COMPANY
REFRIGERATION DIVISION, MARINETTE, WISCONSIN
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Water Conservation

Does Chicago Need Legislation Limiting Water for Air Conditioning Systems?

PART 2

Concluded on this page is a two-part report on the panel discussion of the subject, "Does Chicago need legislation limiting the use of water for air conditioning systems?", presented during a safety conference held in that city.

The first part of the report, published in the March 12 issue of the NEWS, covered talks by Loran D. Gayton, assistant city engineer; James McKeague, Boiler & Refrigeration Department, City of Chicago; and James Hummer, Murphy & Miller, Inc., Chicago.

This part covers the presentations by William S. Bodinus, Carrier Corp., and S. R. Thompson, Thompson Refrigeration, both of Chicago. Bodinus' comments were made as chairman of the air conditioning committee of the Heating, Piping, and Air Conditioning Contractors' Chicago Association. Thompson represented the Refrigeration & Air Conditioning Contractors Association of Chicago.

"For a number of years the heating, piping, and air conditioning contractors in Chicago have been cognizant of the increased consumption of water required for air conditioning and refrigeration systems and the problem of the disposal of this water," stated William S. Bodinus, Carrier Corp., speaking as chairman of the air conditioning committee of the Heating, Piping, and Air Conditioning Contractors' Chicago Assn.

"Statistics on the growth and extent of usage of water have been given to you in the previous papers. These statistics are by no means alarming, nor has the planning of the water works of the City of Chicago been neglected.

"The water system is of adequate capacity to take care of the requirements for refrigeration and air conditioning at the present time and for anticipated increase in the near future.

"Yet at the same time . . . it is essential that we begin now to plan for adequate facilities in anticipation of the time when the increased demands of refrigeration and air conditioning might seriously load or affect the present water distribution system. . . .

"Mechanical water conservation devices today are highly perfected and dependable equipment and can be installed without much concern in new buildings. There is, however, an increased initial cost for the air conditioning system of from 10% to 25% depending upon the extent of the additional building requirements to support and house the water conserving equipment.

"Further, there are application problems such as the disposal of vapor laden exhaust air from the conservation device as well as the noise of the sprays and fans.

"The low cost of Chicago water makes it economically unsound from an owning and operating cost standpoint to install any water conservation device except in the most unusual situation where city water connections may be difficult and costly to install. . . .

Installation of Conservation Devices Difficult

"The installation of water conservation devices for air conditioning systems in existing buildings is a most serious problem, and in many instances impossible.

"For example, a multi-story office building requiring a cooling tower weighing 100,000 lbs. could not be safely supported on an existing building without carrying structural supports right down to costly foundations even to the extent of driving piles or digging caissons which is a foundation requirement for most of our lofty buildings in Chicago. . . .

"The Heating, Piping and Air Conditioning Contractors Chicago Association, therefore, having made a thorough study of all possible applications of water conservation devices, has felt that the time has not arrived when the use of these devices should become mandatory in Chicago.

"The statistics indicate that air conditioning and refrigeration installations consume but a small portion of the Chicago water supply (less than 10%), and the period of peak consumption for this service does not occur at a time when water is in most demand for domestic use.

Stop Water Waste

"It is the opinion, however of the committee that steps can be taken to stop the possibility of uneconomic waste of water on both existing and new buildings which in itself will reduce as much as 25% of the total water used for this purpose.

"Also, on new building installations every effort should be directed toward the use of water conserving devices where they can be planned for in the building structure and architecture.

"On installations made in existing buildings the quantity of water per ton of refrigeration should be established at a reasonable maximum instead of the unlimited usage which condition is now possible. Positive shut-off devices should be installed to stop the flow of water when the machine is not operating.

"The recent controls placed on the use of water for air conditioning and refrigeration purposes in New York City, while originally placed on new installations only, now cover existing installations down to the 3-hp.-size job.

"This latter, retroactive provision worked great hardship on users in several ways. These users who, over a period of years had guided their commercial activities and their office efficiencies with the aid of air conditioning and refrigeration, found themselves:

"1. Without space to locate evaporative condensers or towers.

"2. With systems whose original closely selected equipment, based on city water condensing and attendant low condensing pressures, were no longer able to deliver the required tonnage with the higher pressures required with cooling tower or evaporative condenser.

"3. Faced with a possible hazardous operating condition through excessive operating head pressures being reached because of this same original close selection of refrigeration equipment.

"The facts, of course, are that New York City's supply of fresh water for condensing purposes does not begin to compare with the great natural reservoir which Chicago possesses, and controls that might be necessary there should not be used as reason for controls here.

Sewage Disposal Problem

"The sewage disposal system of Chicago presents a problem which must sooner or later be corrected by the installation of an adequate disposal system.

"Only certain sections of the city are critical, and where adequate sewage disposal facilities are not available, it is obviously foolish to try to use city water and add to a problem which already exists.

"It is reasonable to assume, however, that the sewage disposal system of Chicago will be improved more rapidly than the additional usage imposed upon it by air conditioning.

"The disposal of rain water is now a critical problem even in the remote residential areas, and when this is corrected it is reasonable to assume that industrial and commercial waste water, such as condenser water, will be provided for in the installation of storm sewers or by enlarging the present combination sewerage and storm sewer system."

Complicated Question

Thompson said: "In looking for an answer to this discussion . . . I ran up against quite a problem, a problem that has so many ramifications that I believe it would be best to break it down under 'aspects' in my answer, which is:

"Until definite efforts have been made to stop water wastage and the water rates increased somewhat—then, and only then, would I say that the refrigeration industry be saddled with legislated limits on large tonnage systems only.

"While I was to represent the commercial refrigeration class in this discussion, it really is one problem, as we have installed a total of 190,000 tons of air conditioning and 215,000 tons of refrigeration.

Five thousand commercial ½-hp. units wasting water probably could be more of a nuisance than a 50-ton air conditioner. Yet no one wants to see the owner of a ½-hp. unit restricted of water."

The first aspect considered by Thompson was wastage and odd use of water.

"Everyone knows that at the present time water is used with little restraint in the city," he declared.

"Leases are made with the commercial landlord furnishing the water and no effort on his part to stop wastage, and certainly none on the part of the tenants.

"Water is used to sub-cool many industrial applications.

"Water is used to excessively wash or rinse many industrial applications.

"Water pressure is actually used for motive power.

"Water is excessively used for its value in heat or refrigeration in its raw state.

"Water is used to speed sewerage of solids in some manufacturing."

Discussing the second aspect—cost per thousand cubic feet—Thompson stated:

"Chicago has the cheapest water of any major city and is at 60 cents per thousand.

"Its rates have not been changed since before the turn of the century, despite manifold increases in pumping costs, wage rates, and new construction.

"Using the maximum on a small meter (10,000 cu. ft. on ⅝-in), 11 (of 17) major cities get double the Chicago rate, two triple the Chicago rate, and one (San Francisco) four and one half times the Chicago rate.

"Chicago needs tax revenue, yet Oak Park uses Chicago water as a weapon to charge $2.70.

"Chicago's water is so cheap that all of the aspects under No. 1 are exaggerated: Automatic water regulators on all types of equipment are neglected; it is actually cheaper to 'not repair' than to waste water.

"Water, today, in Chicago is only 27% metered."

He made these points regarding the third aspect—peak demands or "maximum pumpage":

"Essentially, to be fair taxwise, the purchaser of water causing the peak pumpage and its entailed costs, should pay the cost. A demand charge would be logical.

1,000 Million Gals. per Day

"Chicago's average daily pumpage since 1926 is practically the same—1,000 million gals. per day.

"Chicago's maximum days pumpage show several days at plus 40% of average.

"At present, maximum rate of pumpage is nearly double 'average daily' and up until 1938 was about 50%.

"Chicago's refrigeration and air conditioning uses 26% of the maximum pumpage capacity as of 1950, and based upon normal installations (yearly 25,000 tons) will add only 1½% each year.

"There is wastage of water: who will guarantee that restrictions on the 26% will give freedom from water troubles?

"Would it not be reasonable to stop water wastage on the 74% (other users) by an over-all price increase and adopt laws requiring water regulators on refrigeration systems to operate correctly?"

Regarding the fourth aspect—per capita consumption (1948)—Thompson cited these figures on gallons consumed per person per day in various cities; New York City, 148; Philadelphia, 168; Detroit, 147; Los Angeles, 151; Baltimore, 169; Cleveland, 187; St. Louis, 192; Boston, 117; and Chicago, 234.

"In Chicago's amount, 234," he went on, "approximately 26% is for installed refrigeration and air conditioning. In Chicago's 234 is manufacturing which may be more than other cities classified."

Summing up, Thompson said that "the refrigeration and air conditioning industry has and is contributing much to the health and pleasure of the people. We use approximately 26% of the peak water pumpage, without restrictions, although we advocate elimination of waste in our own equipment.

"I believe the entire answer is first; meter every user, and increase the rate of cost to eliminate waste and eliminate non-economic uses of water; second, if, after the above is accomplished and the results are not satsifactory in the over-all reduction of pumpage, legislation against heavy usage will be found to be necessary."

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SOLENOID VALVE
with Twice Dipped
Layer Wound Coil
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Sporlan manufactures
SOLENOID VALVES • SOLENOID PILOT CONTROLS
REGULATING PILOT CONTROLS • REFRIGERANT DISTRIBUTORS
STRAINERS • CATCH-ALLS
SELECT-A-LEVEL Electronic Liquid Level Controls
and the Only THERMOSTATIC EXPANSION VALVES
with FLOWMASTER ELEMENTS and SELECTIVE CHARGE
WHY SO GLUM? ...IT'S SPRING AGAIN!
LOOK! LAST SUMMER MY AIR-CONDITIONING BROKE DOWN EVERY FEW WEEKS. IF YOU CAN'T FIX IT THIS SPRING.. SO IT WORKS ALL SUMMER, I'LL GO BROKE!
SAY, MACK. I'VE GOT AN AIR-CONDITIONING JOB THAT'S ROUGH ON SOLENOIDS—HAVEN'T YOU GOT ONE WITH A COIL THAT WON'T BURN OUT EVERY COUPLE OF WEEKS?
WHERE YOU BEEN BUB? YOU NEED SPORLAN SOLENOID VALVES WITH LAYER WOUND COILS. THEY'RE THE BUSINESS!
PUT ONE ON AND QUIT WORRYING!
* FOR PEAK PERFORMANCE on All installations Buy SPORLAN right down the line!
SPORLAN VALVE COMPANY
MONTHS LATER
HI YA JOE! HAVEN'T HEARD FROM YOU... HOW'S EVERYTHING?
NO SQUAWKS--SINCE YOU PUT IN THAT SPORLAN SOLENOID VALVE MY AIR-CONDITIONING WORKS LIKE A CHARM... LUNCH IS ON ME!
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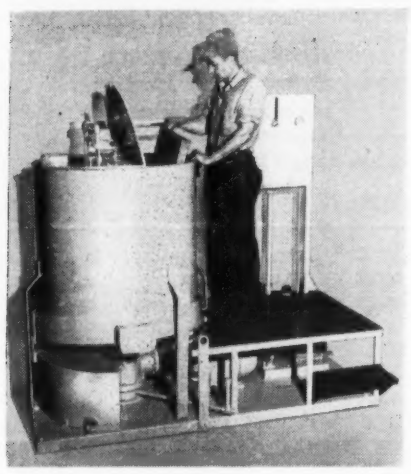
What's New

When requesting further information on new products, please use "Information Center" form.

Safe-N-Ezy Filter Washer-Oiler Cleans 600 Daily



Safe-N-Ezy filter washer-oiler in operation.

——KEY NO. A-330——

OMAHA, Neb.—The "Safe-N-Ezy" filter washer-oiler, made by Paxton-Mitchell Co., cleans permanent type wire mesh filter elements at high speeds, and is presently being widely used by leading railroads in the servicing of filters for Diesel locomotives and passenger cars, the company says.

With this new machine, one man working at a normal rate of speed can clean and oil 600 or more wire mesh filters during one eight-hour day.

The producer says that now, with the Safe-N-Ezy washer, an organization has excellent profit possibilities in contracting for cleaning filters along with their other regular operations.

The washer-oiler works on the principle of centrifugal action. Filters spin in the interior basket throughout the complete cleaning, drying, and oiling cycle, so that they are thoroughly cleaned, rinsed, spun dry, and oiled all in one operation, it is claimed.

Since the machine occupies such a small floor area, only 6 ft. 10 in. by 4 ft. 4 in., it can be conveniently installed in an out-of-the-way location or small shop.

Final plans for distribution of the unit to the industrial field have not been determined pending completion of market research currently under way by the manufacturer. A franchise plan under which the machines would be leased to a licensed operator in each major market, as well as an outright sale plan, are under consideration.

Tekni-Craft Model Uses Barometric Pressure

——KEY NO. A-331——

ROCKTON, Ill. — Tekni-Craft has announced its new automatic continuous freezer for frozen custard, soft ice cream, and other favorites served direct from the freezer.

Called Model 77, the new unit is said to utilize "the scientific principle of barometric pressure to provide an entirely automatic and continuous feed.

"Regardless of the rate of drawoff, mix always flows into the freezer at exactly the right rate. There is nothing to adjust or regulate—no pumps or valves. Overfilling or underfilling is impossible.

"This barometric feed and automatic freezing keeps the 10-qt. chamber always full, so that the operator may draw off a continuous stream of frozen custard or other confection."

A new feature of the mix container is that it keeps the mix supply in full view, even from a distance.

Model 77 has its own new beater, drawoff, automatic temperature controls, and beater drive shaft.

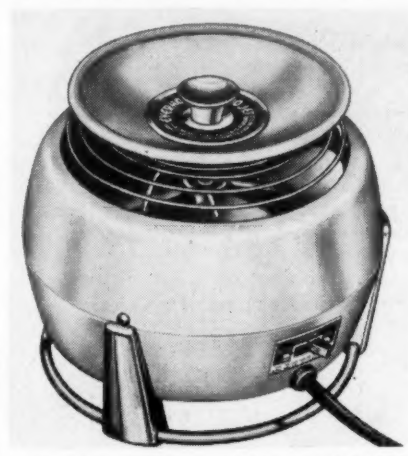
Wide Temperature Range Featured by Thermojet

——KEY NO. A-332——

TOLEDO—A temperature adjustment of up to 50° F. in range and a variation in air output of up to 35% are claimed for the new Everhot Thermo Jet heater and air circulator manufactured by the Swartzbaugh Mfg. Co. here.

Temperature adjustment and fan speed are controlled by a "Miracle Disc" spiral control located on the back of the unit.

Air is circulated by a 7-in., 5-blade deep-pitch fan while heat is provided by a 1,320-watt Chromel element.



Another feature of the model 912 is that the base can be detached and inserted in front of the fan grille so as to act as an air circulator baffle.

The heavy gauge sheet steel body is finished in baked enamel and trimmed with chrome. Its feet are of rubber. It measures 9½ in. in diameter and stands 8 in. high. Shipping weight is 7½ lbs.

The unit is equipped with a 65-watt induction motor with three-position single-pole switch and operates on 115 volts, a.c. only. A Preenex cord set is provided.

Agitair Meter Measures Velocities Instantly

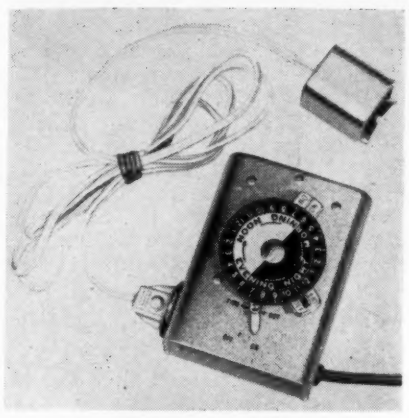
——KEY NO. A-333——

NEW YORK CITY—A new Agitair meter for measurement of air velocities has been introduced by Air Devices, Inc., here.

Based on the hot thermopile principle, the battery-powered instrument gives instantaneous measurement of air velocities as low as 5 f.p.m. and as high as 4,000 f.p.m., with static pressure readings from 0 to 4 in. wg.

Compact and light in weight, it can be carried from site to site.

Robot Control Employs Heater In Operation



——KEY NO. A-334——

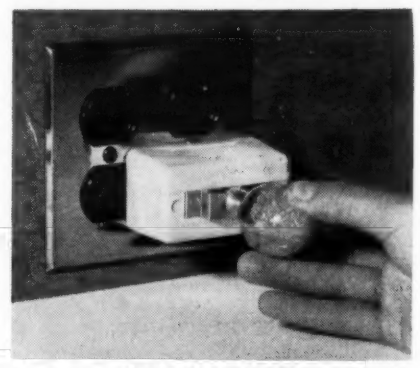
MILWAUKEE — A robot control that automatically lowers room temperature at night and raises it in the morning has been introduced by the Miller-Harris Instrument Co., here.

The control does this by providing heat just below the thermostat and "fooling" it so that it will not turn the burner on after a specified hour at night. At a specified hour in the morning, the heater turns off and the thermostat goes to work.

The robot control consists of two parts. A small heater unit hooks underneath the room thermostat. The cord from this heater is plugged into the Robot 24-hour clock switch. The clock switch in turn is plugged into a convenient 115 volt a.c. outlet. Wiring may either be exposed or concealed.

Current consumption of the heater is said to be less than one watt. The clock control can be mounted on the baseboard or wherever desired. It may be "unplugged" at any time and used to turn radio, lights, or coffeemaker on and off automatically.

Davis Flash Bulb Tester Has Varied Applications



——KEY NO. A-335——

PLANO, Ill.—A night light and flash bulb tester that will permit a camera fan to eliminate bad flash bulbs before he takes his pictures has been introduced by the Davis Mfg Co., here.

The tester plugs into any 110-volt circuit. When a good flash bulb is pressed against the contact, a light from within the tester glows. If the tester light does not turn on, the bulb is a dud.

The manufacturer says that the tester can also be used to test fuses, light bulbs, and Christmas tree lights. By inserting a 6-watt bulb in the unit, it can be used as a night light.

The testers are shipped to dealers 12 in a carton, at $1.25 each.

To Save Space - To Save $$$

— here is America's Most EFFICIENT REFRIGERATOR

400 lbs. Fresh Food Capacity *plus* 200 lbs. (approx.) Freezer-Locker Space

ONE CONDENSING UNIT ADJUSTABLE CONTROL

JORDON exclusive, thoroughly proven in thousands of installations. Saves floor space — speeds food handling — "dresses up" any location — cuts electric consumption in half because ONE refrigerator, ONE condensing unit, does the work of two!

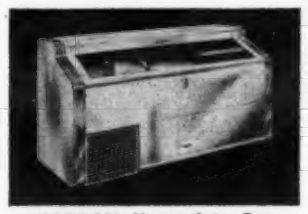
AVAILABLE IN 2 SIZES FOR EVERY REQUIREMENT

JORDON 14/6. 14 cu. ft. Normal refrigeration. 6 cu. ft. Freezer-locker space. Height 71¼". Depth 33". Length 43½".

JORDON 10/4. 10 cu. ft. Normal refrigeration. 4 cu. ft. Freezer-locker space. Height 69". Depth 29". Length 39".

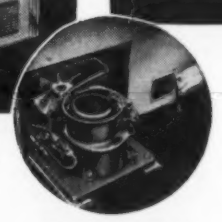
Write For Special Data Sheets

JORDON MANUFACTURES A COMPLETE LINE OF REACH-IN REFRIGERATORS and BEVERAGE COOLERS

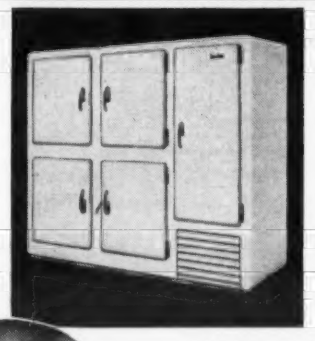


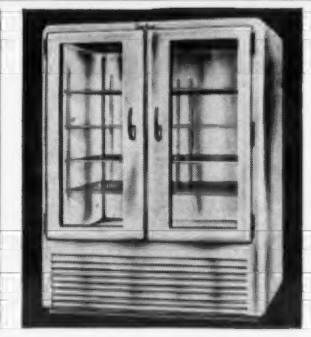
JORDON Heavy-duty Dry Beverage Coolers. 12 to 32 case capacity.

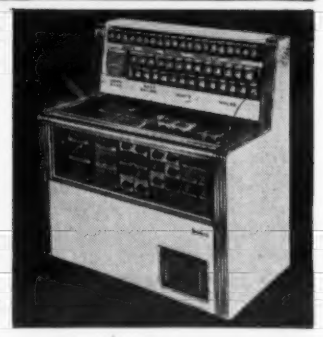
JORDON Beverage Cooler with factory attached PANELYTE BAR TOP. All sizes.



Pull-Out Hermetic Units on Tracks





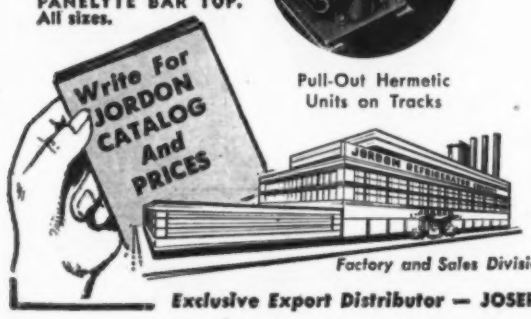


23—30—42—60 cu. ft. models available. Self-contained, hermetic units or for remote installation. Solid or glass doors.

JORDON REFRIGERATORS are sold and warehoused nationally by responsible and experienced dealers.

The New JORDON "TELEVISION PANTRY"

In the trend of the times! A stylized, low-temperature, open-top, glass-front refrigerator with a handy "reminder" shelf-type superstructure. One of the many models available in the complete JORDON line of low temperature merchandising and storage equipment. Special catalog available.



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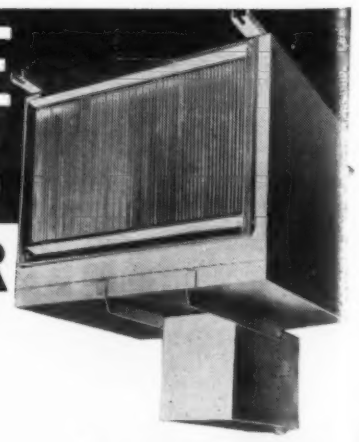
EVAPORATIVE CONDENSERS by KRAMER



- Time Tested
- No Rusting
- Trouble-Free Operation

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2 TO 10 TON CAPACITY

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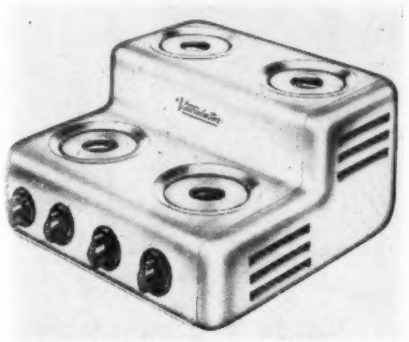
What's New (Cont.)



'Snap-In' Electric Unit Featured In Coffee Maker

—KEY NO. A-336—

CHICAGO—A patented Vaculator "Snap-In" electric heating element is an outstanding feature of the new Vaculator line of heavy duty coffee maker ranges manufactured by the Hill-Shaw Co., here.

The Snap-In element is an enclosed Chromolox heating element with terminals projecting downwards to fit snugly into a ceramic receptacle.

First it is claimed that this enclosed element has considerably longer life than the ordinary "open" type of element and plate.

Secondly, if the enclosed element should burn out, the old element can be lifted out and the new Snap-In element put in place without an electrician, according to the company.

Other innovations claimed for this new Vaculator heavy duty range line are: modernly styled stainless steel body and heavy duty snap switches.

Also three heats on every burner for brewing and maintaining coffee at the proper serving temperature; rugged internal asbestos-covered nickel wire; and attached cord set with fiber glass insulation inside the range.

Range bodies have been designed to take up one third less counter space.

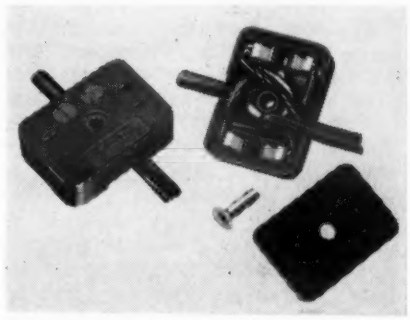
The Vaculator heavy duty electric ranges are available through leading restaurant supply houses, the manufacturer stated.

Unilectric Introduces New Junction Block

—KEY NO A-337—

MILWAUKEE — The third in a series of thermosetting phenolic junction blocks designed to simplify original wiring installations and future service needs on portable refrigeration products, air conditioning equipment, and other electrically powered equipment has been introduced by United Mfg. & Service Co., here, recently.

The Unilectric Twin-Blok junction block, as the unit is called, is similar in construction to the Nu-Blok, Jr., which was announced a year ago. It differs in that it is slightly larger in size and contains two receptacles to



accommodate standard attachment plug caps in place of the single receptacle on the Nu-Blok, Jr., the company stated.

These receptacles are intended to permit the plugging in of compressor cords, fan cords, or other electrical circuit assemblies as required.

Twin-Blok incorporates the "short-proof" splice protection wells, has built-in strain relief, and is approved by Underwriters' Laboratories and CSA for proper applications of the unit.

Twin-Blok measures 2½ in. long, 1¾ in. wide, and .850 in. deep. It has phosphor bronze contacts, Knockout will accommodate up to 12-2 type S power cords.

It is permanently assembled to wiring with single eyelet which provides channel for mounting screw or bolt. It is available now as a component of Unilectric wiring systems.

Broiler Cooks Both Sides Of Steak at One Time

—KEY NO. A-338—

NEW YORK CITY — A double-action table broiler, that broils both sides of a steak at the same time with infrared heat, has been introduced by Kord Mfg. Co., Inc., here.

Measuring 6 in. wide by 12 in. long and 12 in. high, the broiler is made of heavy steel plate finished in chrome. A 10-in. by 10-in. adjustable grille inserts from the top, while large mica broiling elements sear the meat from both sides at the same time.

The unit is rated at 1,000 watts and plugs into an a.c. or d.c. 115-volt outlet. A 6-ft. cord is attached.

The Kord broiler is said to sear the meat so that juices are sealed in and, because of the infrared cooking, produces no smoke. It may be used with fish, fowl, meats, sandwiches, and steaks.

'Moisture Magnet' Removes 14 Pints of Water Daily

—KEY NO A-339—

AUBURN, N. Y.—The "Moisture Magnet," a new portable electric dehumidifier for home and commercial use, is now being produced by the Remington Air Conditioning division, here.

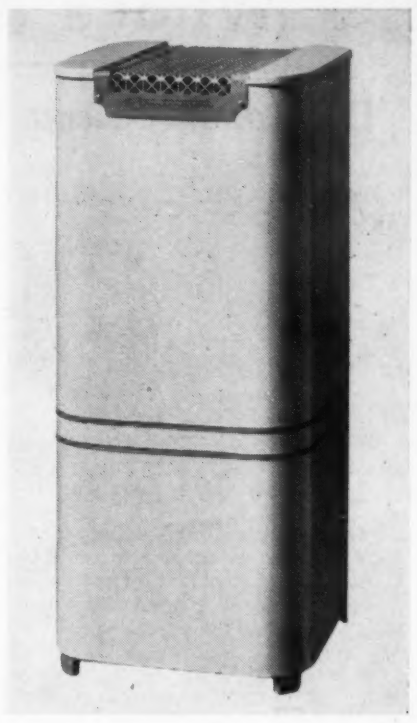
This small, lightweight unit removes excess moisture from indoor air; protects expensive property, equipment, and materials from rust and rot; and turns damps, unusable basements into game rooms, workshops, and storage areas.

The Moisture Magnet removes 14 pints of water exery 24 hours from room air at 80° F. and 79% relative humidity, and up to 1 pint of water every hour (24 pints in 24 hours) under more severe conditions.

To install, plug the Moisture Magnet into any 115-volt, single phase, 60-cycle outlet. A special Du-Flo fan draws damp air over refrigerated coils at the proper rate for maximum moisture to condense on coils, then expels dry, reheated air into the room.

The coils are devised to form the moisture quickly into drops, prevents re-evaporation. The drops fall into a rustproof 8-quart receptacle which is emptied daily (or if desired the Moisture Magnet can be located over a basement drain). It is impossible for the unit to overdry air at ordinary room temperature, the manufacturer said.

Operation is noiseless, requiring no more current than an ordinary household electric bulb. The Quietrol cabinet is constructed of molded, tempered, plastic-impregnated fiber to ensure silent, vibration-free operation. French grey and taupe finish harmonizes with any setting.



The refrigerating system is hermetically sealed with a lifetime supply of refrigerant and oil. The unit is 30½ in. high, 13 in. wide, and 13 in. deep, and weighs 56 lbs. Remington Corp. also manufactures larger models for commercial use.

The Moisture Magnet is protected by a five-year warranty on the power unit.

Information Center

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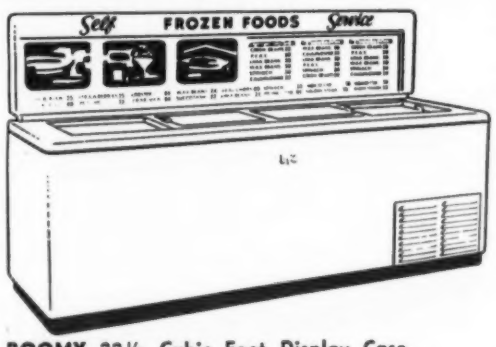
3 wonderful, new DISPLAY CASES By BTC

SMART-LOOKING 16 Cubic Foot Display Case. Model DC-16. 76" x 28" floor space. With or without superstructure.

COMPACT 10 Cubic Foot Display Case. Model DC-10. 55½" x 28" floor space. With or without superstructure.



ROOMY 22½ Cubic Foot Display Case. Model DC-23. 96½" x 28" floor space. With or without superstructure.

Take our word for it . . . there'll be plenty of sales and profits ahead if you sell the BTC line. For proof, just look at these three wonderful new BTC Display Cases!

Styled for beauty . . . from the compact 10 cubic foot display case to the gleaming 22½ cubic foot case! And they're all built to give your customers years of service—at less cost than they ever dreamed possible!

Roomier than ever . . . thanks to BTC's vapor-sealed insulation that lets them hold lots more food in lots less space. What's more, they have all the famous BTC features — heavy-gauge Bonderized steel cabinet, brilliant white baked enamel finish, capillary expansion, lateral plate evaporator, plus a five-year warranty against food spoilage and defective operation of the compressor unit.

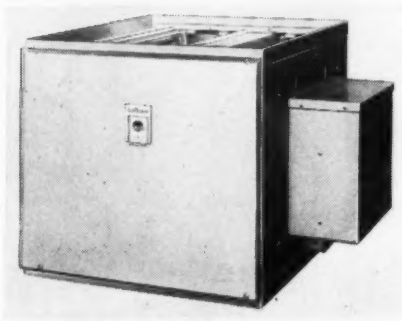
Get the full facts . . . on these wonderful new cases — write Brewer-Titchener today!

BTC DISPLAY CASES

THE BREWER-TITCHENER CORPORATION, Binghamton, New York

What's New (Cont.)

Electronic Air Cleaner Installed In Return Duct



KEY NO. A-3310

PITTSBURGH — American Radiator & Sanitary Corp., here, has introduced a new electronic dry-type air cleaner which is installed in the return duct of any air heating or cooling system.

Made in sizes to meet all residential installation requirements, the Magne-filter is said to trap particles of dust and dirt as small as one hundred thousandth of an inch in diameter by electrical attracting. It also removes pollen, air-borne bacteria, other microscopic particles, and smoke, according to the company.

Because the air cleaner has filter cells at its collector element, it will continue to filter the air if the electrostatic action is interrupted, it was said. Only normal replacement at the end of the heating season is necessary, the company stated.

The Magne-filter can be installed either vertically or horizontally according to the position of the heating or cooling duct.

There are seven sizes, having two to eight filter cells, with an air volume up to 600 c.f.m. for the smallest size, and from 2,100 to 2,400 c.f.m. for the largest. These sizes are applied to heating units whose B.t.u. per hour at register ranges up to 64,800 for the smallest size, and from 227,000 to 259,000 for the largest.

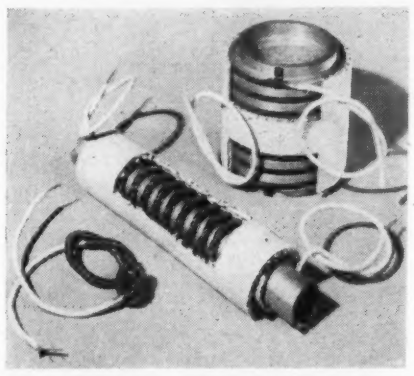
Shipping weights are from approximately 90 to 250 lbs. Multiple units are used for installations requiring larger air volume.

The electrostatic action is produced by a power pack similar to the power units in radio and television sets.

It thus steps up the regular 110-volt lighting current to a higher potential and changes it, with rectifier tubes, from alternating to direct current, it was explained.

This current is then applied to the filter cells through metal grids, producing a strong electrostatic field that attracts and holds dust, dirt, and smoke particles in the filters. The Magne-filter reportedly consumes about as much electricity as a 25-watt bulb.

The unit requires no water or drainage connections, according to the manufacturer.



Serpentine Heating Units Available for Pipes, Valves

KEY NO. A-3311

BUFFALO—New serpentine flexible electric heating units which can be applied to pipes, valves, cylinders, and containers carrying viscous or free-flowing fluids, chemicals, plastic compounds, or gases have been announced by the Titan Mfg. Co., here.

Sheathed in 5/16-in. diameter spring steel, the units combine extreme flexibility and strength with minimum bending radius of ½-in. Due to refractory insulation, they can operate at temperatures approaching 1,000° F. for long periods.

Standard units are offered in lengths of from 1 ft. to 10 ft., in in 1-ft. increments, for 115 or 220 volts. Three types are available: 5 watts per lineal inch, giving a sheath temperature of 475° F. in free air; 10 watts, 650° F.; and 15 watts, 700° F. Other types with higher temperatures and longer lengths are made to specifications.

3 Coating Resins Announced by Plaskon

KEY NO. A-3312

TOLEDO — Three silicone alkyd coating resins have been announced by the Plaskon Division, Libbey-Owens-Ford Glass Co., as the first chemically combined silicone alkyd resins, commercially available.

In addition to the advantages of availability and the resins' imposing list of properties, the propects of a low price range is suggested by the Plaskon announcement, according to the company.

The resins, designated Plaskon ST-856, ST-873, and ST-881 silicone alkyd resins, "are expected to find wide use in military applications because of their important properties, particularly heat resistance, and including excellent resistance to weathering, humidity, chemicals, and salt spray, plus satisfactory performance under widely varying climates," the company said.

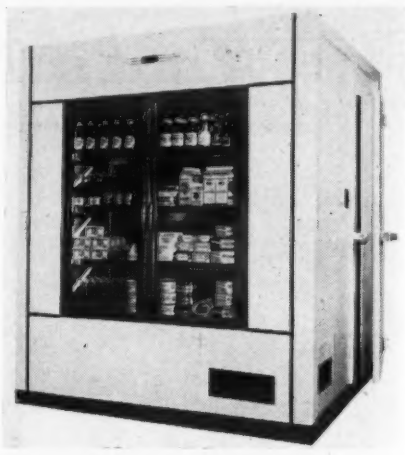
Expected uses for silicone-alkyd resins include coatings for space heaters, transformers, motors, containers, electric roasters, refrigerators, stove and stove hardware, exterior signs, and steam radiators, among others.

Although presently priced at $1.45 per pound, Plaskon officials are optimistic about a sharp decrease in price as usage of the resin increases. Plaskon reported that it would require "only a good volume of sales" to cut the present price of resin in half.

In the foreseeable future they expect the silicone alkyd resins to approach the price range of regular alkyd resins. At the present price, the resins are said to have an economy advantage in their suitability as single-coat applications, "thus eliminating primer coats with the accompanying time, price, and labor costs."

"Other than the high heat resistance that is a usual advantage of silicone products, coating films formulated with silicone-alkyd have superior hardness, abrasion resistance, adhesion, and flexibility plus a high degree of resistance to solvents, acids, and alkalies," the company declared. "Of considerable importance also is the fact that the resin retains these properties over a wide range of temperature."

All are intended to be used as one coat applications.



Introduce Combination Walk-In and Reach-In

KEY NO. A-3313

NEW RICHMOND, Wis.—Minneapolis Show Case and Fixture Co. here, recently introduced the Sterling P-60, a combination self-serve dairy refrigerator and walk-in cooler requiring only 36 sq. ft. of floor area.

It measures 6 ft. by 6 ft. by 7 ft. 6 in. and provides both display and storage facilities. It is constructed in two sections. Each section will clear a standard 36-in. door.

An Add-a-section unit is also available in depths of 2 ft. and 3 ft. This permits enlarging the cooler as requirements demand.

The P-60 is equipped with porcelain front and fluorescent illumination. It is manufactured in three different front arrangements featuring either an extruded aluminum swing type door or hard rubber slide type door assembly. Entrance door can be furnished on either the right or left side of cooler.

It is available in both remote and self-contained models to meet each individual requirement. Self-contained models are complete with coil and pull-out condensing unit installed. A ½-hp. unit is used for normal use and ¾-hp. unit under heavy load conditions.

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- Smooth-working, handy, hinged rear door
- All models available with front sliding doors for self-service

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Hot Prospects

Paying Salesmen for Each Call Made Boosts Commercial Firm's Name List

NEW ORLEANS — A sure means of doing away with "discouragement" which slows up salesmen, and of obtaining a larger list of "hot prospects" daily, lies in paying commercial refrigeration salesmen for every call, believes Martin Jones, president of Jones Refrigeration, Inc., here.

The Jones concern, which does a volume upwards of $750,000 per year, believes in "wearing out shoe leather" to make commercial refrigeration sales. Each morning, a list of prospects is handed out to the regular commercial refrigeration salesmen, with instructions to call upon each name listed, plus any other potential users of commercial refrigeration in the area. The list comes from tips by satisfied users, from manufacturers and distributors, Dodge reports and other sources, and is prepared personally by Jones, who keeps in close touch with every operation of the firm.

Each salesman is compensated for every sales call, but must fill out a "report" which gives such details as the prospect's name, the nature of his business, the type of commercial refrigeration currently being used, his attitude toward suggested purchases, the date at which he probably will be most likely to buy, etc.

All this information is filled in on a special card, provided by Jones Refrigeration, Inc., and turned in at end of the day.

Upon the number of calls made by the salesmen depends their basic income, of course. If the salesman is paid for his time out on the job, he will automatically make many more calls—instead of going to the ballgame, or spending an afternoon relaxing at home, Jones believes. He feels that he can afford to pay each salesman for each call, on the simple theory that the "law of averages" alone will produce more sales, if more calls are made.

By reviewing the reports turned in at the end of the day, the Louisiana commercial refrigeration dealer can keep a close finger on trends, and shape his inventory and advertising program accordingly.

The prospect list, which Jones prepares daily, incorporates hotels, supermarkets, restaurants, cafeterias, and industrial refrigeration users. Through carefully studying his potential market, Jones sees to it that every one of these prospects is contacted at least two or three times a year, and that when the time comes to buy, the chances are that Jones Refrigeration, Inc., will be called.

Omaha Becomes 13th Nebraska City To Pass Law Requiring All Milk To Be Grade A

OMAHA, Neb. — The Omaha city council has passed an ordinance which will make Omaha an all-Grade-A milk area by April 1. The measure had the support of producers, dairies, and consumers.

About 1,100 of the Omaha milksheds' 2,000 producers are now providing Grade A milk, according to Dr. Edwin Lyman, city-county health director. Most of the remainder will be ready to do so by the April 1 deadline, he said.

In Lincoln, meanwhile, the Nebraska legislative committee on agriculture voted to postpone indefinitely action on the controversial LB-247. The bill would provide that a price differential be paid for butterfat in first grade and premium cream, and that regulations be adopted to identify the age of cream as not over four days old when offered for sale.

Farmers opposed the bill on the ground that it failed to recognize the use of mechanical refrigeration by which cream could be satisfactorily stored for more than four days in order to cut down on shipping costs. Dealers who sell refrigeration equipment for dairymen also opposed the measure.

In another action, the committee approved LB-333, which would establish minimum standards for production, distribution, processing, and sale of milk designated as "Grade A." This bill is favored by the refrigeration dealers in view of the fact that as Grade A milk production is increased, the sale of mechanical milk coolers also will increase.

Senator Otto Liebers of Lincoln, introducer, pointed out that 30 towns in Nebraska want to set up minimum standards for handling of milk for sale as Grade A but can't because they are unable to pay expenses of such a program. A fee of two cents on each 100 lbs. of Grade A milk produced and an annual $10 certification fee would pay the expense of administering the program, the senator stated.

The director of the State Department of Agriculture and Inspection would adopt minimum Grade A standards, which already have been set up by the U. S. Department of Health, and could reduce the inspection fee if it brings in more money than needed. An unsalaried advisory committee of five would be appointed to act as a referee when problems rose.

Violation of the act, or regulations issued under it, could bring a fine of from $25 to $100 for the first offense and from $100 to $500 for subsequent violations.

Thirteen towns, including Lincoln, have set up compulsory standards. Others are Omaha, Grand Island, Hastings, Kearney, Lexington, Scottsbluff, Holdrege, McCook, Seward, York, Beatrice, and Nebraska City.

In other Nebraska towns, Senator Liebers pointed out, milk produced under the most unsanitary conditions can be marketed as Grade A.

The senator further pointed out that while there are now 1,700 Grade A milk producers in Nebraska, the demand causes the importation of $2,000,000 worth from Minnesota annually.

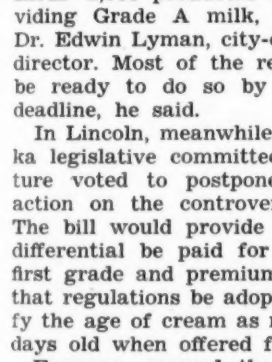
Unique Water System Cools Cyclotron's Electro-Magnet

ST. LOUIS — A highly unusual cooling contract was fulfilled here recently, when Nachman & Co., Curtis air conditioning contractor, provided a water-cooling system to cool the electro-magnets of the Washington university cyclotrons.

Mounted in oversized trailers, the cyclotrons are touring radio-active mineral sites throughout the country.

Comfort air conditioning is provided for the working spaces in the two trailers used to house two cyclotron units. But only circulation of ground-temperature water is needed to provide sufficient cooling for the electro-magnets, which focus electrons in the atom-smashing cyclotrons, according to Norman Nachman, head of the firm.

Both of the cyclotron trailers are built for comfortable, safe operation in radio-active areas, such as the plateau in Colorado, where highly radio-active materials have been discovered.



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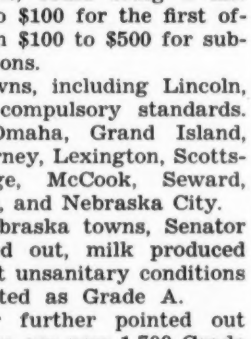

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LOOK TO NOR-LAKE

for QUALITY refrigeration equipment

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open territories available: dealer and distributor inquiries invited

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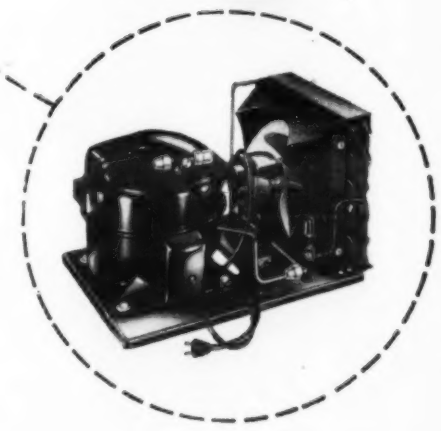
Of course there's a reason! Manufacturers know that Tecumseh's internal spring mounting and forced feed lubrication gives them a smooth, quiet and vibrationless unit that they can rely upon for low-cost, trouble-free operation. Yes, customer satisfaction can be assured when a Tecumseh Hermetic is specified as standard equipment in their frozen food cabinets.

No wonder Tecumseh's present production is over 200,000 units per month, and today there are more than 8,000,000 Tecumsehs in the hands of satisfied users.

Let us send you a catalog today describing these Tecumseh units.



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BACK TO FUNDAMENTALS

Refrigeration Principles for
Beginners & Experienced Engineers, Salesmen, and Dealers

By K. M. Newcum, Author of
THE MASTER SERVICE MANUALS

Refrigerant Driers & Drying Methods - 2

EDITOR'S NOTE: K. M. Newcum's MASTER SERVICE MANUALS are without doubt the most widely read refrigeration books ever published, and the author can write authoritatively on all phases of the subject.

This week is published the second instalment of his review of what is probably the subject most frequently discussed by servicemen everywhere—moisture.

If the refrigerant metering device is, for example, at -50° F., it will squeeze the moisture out of solution down to approximately one part per million.

Our problem, then, in preventing freeze-ups at the refrigerant metering device is to remove the moisture from the refrigerant to a sufficiently low percentage in parts per million that it can enter and pass through the metering device without any moisture being frozen out.

In the past it has been the normal procedure to install a drier containing one of the popular drying agents in the liquid line near the condensing unit, since that was the most convenient point.

It was assumed, and data was submitted to indicate, that drying agents would reduce the moisture content to a point where the moisture would not freeze out in the refrigerant metering device.

The success or failure of the driers to accomplish this purpose was something that has baffled the industry for many years and has cost a considerable amount of money.

Until just recently there was no particular emphasis placed upon whether the drying agent removed moisture by physical adsorption or by chemical absorption. Activated alumina and silica gel are *physical* drying agents and remove moisture by *physical* adsorbtion; that is, the moisture is taken up in the capillaries of which the drying agent is composed and upon the surfaces of the drying agent. Calcium sulphate, sold in the refrigeration industry under the trade names of Drierite, DuCal Drierite, and Remcal, is a chemical drying agent which absorbs 6.6% of its weight in moisture by *chemical* action plus an additional amount by physical adsorption.

For many years the industry knew that when a physical drying agent did seem to successfully remove the moisture it was during the lower temperature months of the year; that is, the fall, winter, and spring. Then, for some reason or other, when the hot weather came along in the summer the refrigerator started to give freeze-up trouble.

The Tecumseh Products Co., manufacturer of large quantities of hermetically sealed condensing units and completely factory-assembled systems discovered that silica gel (or activated alumina) driers installed in the high side, that is, the hot liquid line, were efficient during the time when liquid temperatures were low but were highly inefficient during high condensing temperature periods. They, then, started a series of tests on this and found that silica gel (and activated alumina) took moisture out during the cooler weather and gave it up during the hot summer weather.

LOCATION OF DRIER

Continued research by the company revealed that by locating the physical drying agent (silica gel or activated alumina) driers in the low side, that is, between the refrigerant metering device and the evaporator, they were able to successfully reduce the moisture content and maintain it at a sufficiently low point that "freeze-ups" were entirely eliminated. The company has, therefore, been able to successfully market hundreds of thousands of refrigeration systems where otherwise their moisture problems would have been unsurmountable.

It simply is a matter of moisture vapor pressure between the refrigerant and the drying agent. The discovery revealed that the physical drying agents, such as silica gel and activated alumina maintain a very low vapor pressure when they are cold, but the vapor pressure naturally increases upon an increase in temperature.

To maintain the low vapor pressure over silica gel and activated alumina or other physical drying agents, they need only to be kept cold, which can be done in the low side between the refrigerant metering device and the evaporator or at the outlet of the evaporator between the end of the evaporator and the suction line, or in the suction line where the cooler suction vapors keep the moisture vapor pressure in the bed of drying agent down to where they will efficiently remove and retain the moisture.

It, therefore, will be found that hundreds of thousands of smaller completely factory-assembled units, both domestic and small commercial, are equipped with low side driers containing silica gel. It also will be found that their operation is quite successful by virtue of the fact that they are on the low side where they are kept cold and because they are cold, they retain the moisture and keep it from freezing out in the refrigerant metering device.

Moisture Control Unit

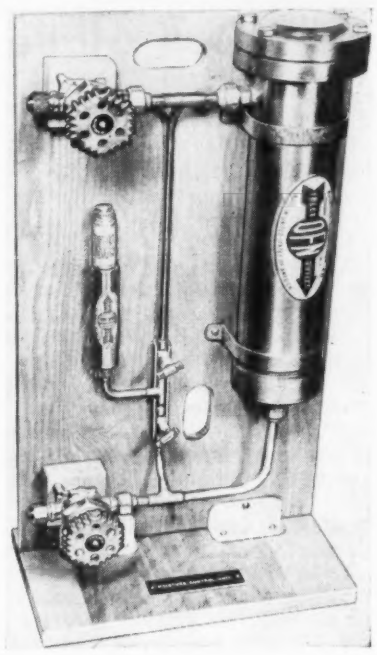


Fig. 69 is the moisture control unit developed by McIntire Connector Co. to determine moisture content of a system.

Calcium sulphate absorbs moisture by *chemical* action, that is, taking the moisture from the refrigerant and converting it into the hemahydrate. Therefore, this drying agent is efficient in the liquid line even at temperatures up to 150° F.

More recently it was discovered that by adding a very small amount of calcium chloride to calcium sulphate to form a new drying compound called DuCal Drierite, the amount of moisture absorption by chemical action was increased; also that this new material maintained its complete efficiency with liquid refrigerant temperatures up to 150° F.

INDICATING MOISTURE

Further research indicated that this drying agent was very successful for a liquid line drier, even at temperatures much higher than normally encountered in hot liquid lines in refrigeration systems. It was first used in the refrigeration industry by McIntire Connector Co. in their moisture control unit shown in Fig. 69.

This moisture control unit was designed for temporary attachment to the system for drying at time of installation or subsequent thereto. The moisture content is indicated by a moisture indicator, which is a part of the refrigerant control unit. Repeated tests proved beyond doubt that the DuCal Drierite did very efficiently reduce the moisture content of very wet "Freon-12" and methyl chloride down to a sufficiently low quantity in parts per million that there would be no freeze-ups, even in very low temperature systems, at liquid temperatures up to 150° F.

Later, calcium sulphate was placed on the market in regular driers for permanent installation.

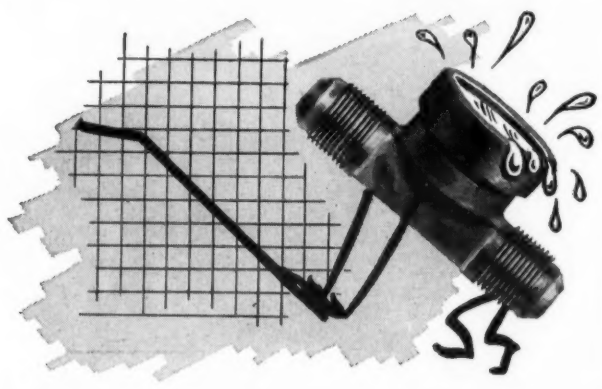
(To Be Continued)

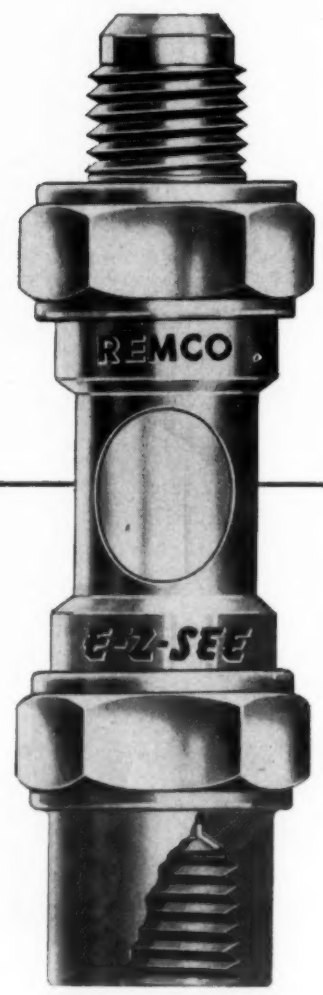
Applebaum Heads Cochrane's Water Treatment Division

PHILADELPHIA—Cochrane Corp., here, manufacturer of water conditioning equipment and steam specialties, has announced the appointment of S. B. Applebaum as manager of its water treatment division.

Applebaum joined Cochrane in 1949. Since then he has been manager of the cold process section of the water treatment division.

REMCO EXPLAINS THE TRUTH about losses from LEAKING LIQUID INDICATORS





Even though they may be constructed of the highest quality materials, conventionally designed liquid indicators depend upon the resiliency (springiness) of the gasket material to *form the initial seal* and also *to maintain the seal.*

Unfortunately, rubber-like gasket materials tend to lose their resiliency with age, and as they lose their resiliency, they "cold-flow" or "take a set" — then a leak results.

But not so with E-Z-SEE. In the exclusive E-Z-SEE design, (see illustration) each gasket is backed up by a spring. As the E-Z-SEE gaskets lose some of their resiliency, a *leak cannot result* because the coil springs compensate by continuing to apply just the right amount of force upon the gaskets, *to permanently maintain the seal.*

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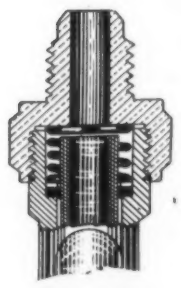

Note how in E-Z-SEE, unlike in conventional liquid indicators, spring-compensated leak-proof gaskets and 'floating' high-pressure Pyrex glass assure you the following advantages: 1) Perfectly safe . . . glass is protected from damage by unique slotting arrangement — safe at pressures up to 500 PSI. 2) Positively leak-proof . . . can't leak because springs automatically maintain just the right force to form a positive seal around the glass. 3) E-Z-to-see through . . . both sides of the body are open to let in light through the tubular high-pressure gauge glass. No more losses from leaking — here truly is the 100% answer to the industry's demand for a fool-proof liquid indicator.

E-Z-SEE is available in connection sizes ¼", ⅜" and ½" in male flare both ends; one end female and one end male (as illustrated); or extended sweat connections to permit soldering without disassembling.

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540-HR	540	1052	153.22	9½"	39"	23⅞"
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Refrigeration Man (Now with Army Post Engineers) Sees How the 'Other Half' Installs Equipment

CAMP POLK, La. — Many's the time that the commercial refrigeration industry has sought to bring its wares before the public eye.

That's been accomplished in a town near here. In fact, not only are condensing units in full view of the public, but the public will be lucky if it doesn't stumble over the things and break a leg.

From Otto Tinzman, refrigeration man now with the Post Engineers of Camp Polk, come some pictures and a brief description of condensing units which are located on the *sidewalk* just outside the stores they're serving.

These installations appear to be rather simple. First of all, there's no need to prepare a special base; just leave the units attached to the shipping crate.

Then drill or hack a couple holes through a convenient wall or door for the refrigerant and electrical lines.

Don't worry about their appearance, but it might be a good idea to keep the lines from getting fouled up in the drive belt or condenser fan.

Outside of that there's nothing to it. Of course, there's always the chance that someone might stumble over the unit.

Or maybe even a small child might stick his hand in the fan or flywheel. But why go to the expense of a guard.

And if some dog follows his natural bent and shorts out the control, why maybe that'll mean another service call. Same thing might happen if it rained.

No doubt NEWS readers will react in a variety of ways to these pictures.

Here's what Tinzman said when he sent in the pictures shown at the left:

"It often occurs to me what a hell of a gamble a businessman takes as he scans his phone book for some refrigeration technician and picks out the sort that installs such junk as here noted.

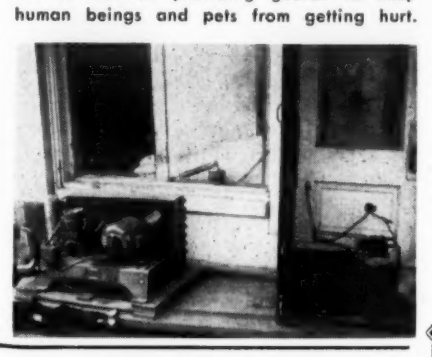
"How can the businessman challenge the knowledge of the fellow that answers his summons for repair or installations? They have nothing to show that they know a damn thing about the business, not even a license, though the fellow in town that cuts our hair must qualify, via a state license.

"I've plenty of respect for a good refrigeration man, for he has the talents of half a dozen trades, being called to do part of plumbing, carpentering, electrician, brickmason, and diagnostician.

"What we need is a John Lewis for an organization of refrigerator men with the necessary qualifications to entitle us to a higher rate amongst the trades, in respect and pay, and not be under the wings of some other trades, like orphaned ragpickers, as seems our status today."

Sidewalk Installations . . .

There may be good reasons for installing condensing units out on the sidewalk, but it might be a pretty good idea to arrange a "dog-house" or some other means of protecting the unit from damage due to the weather, not to mention providing guards to keep human beings and pets from getting hurt.



Fur Processor Finds Pelts Can Be Stored Indefinitely at 40-45°

ST. LOUIS — Raw fur seal-skins, shipped to St. Louis from the Bering Sea in wooden barrels, can be stored indefinitely at temperatures between 40° and 45° F. without damage, it has been determined by Fouke Fur Co., here, world's largest processor of furs.

The country's only major supplier of furs to both the government and fur-coat manufacturers, Fouke Fur experimented with many types of refrigeration before determining that skins packed in barrels, 90 skins to a container, and fluxed with borax to prevent bacteria, could be kept for an unlimited time.

Commercial storage is utilized because of the heavy investment which would be required to maintain a huge holding plant, according to the management.

The barrels, which are stacked to allow plenty of air circulation around them, are maintained at an average of 42° F. in the St. Louis cold storage plant which has the contract with the fur company. It has been found possible to build up such a large backlog of fresh skins that much of the uncertainty brought about by present war conditions has been eliminated, it was reported.

Fouke Fur recently installed a 5-ton Curtis air conditioning unit to maintain low temperatures in the processing laboratory of the plant, where new developments in fur tanning and preparation are being studied.

L & H Names Perkins

MILWAUKEE—Perkins Sales Co., Detroit, has been appointed distributor by A. J. Lindemann & Hoverson Co. here, manufacturer of L & H "Lectro-Host" line.

The Perkins company, which maintains a branch in Grand Rapids, Mich., will handle the L & H line in all of the Michigan area, exclusive of the upper peninsula and a few southern counties.

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Self-Serve Cases Ease Personnel Shortage, Modernization Plan

LINCOLN, Neb. — A $25,000 remodeling project, involving the installation of refrigerated self-service display cases for meats and an addition to the frozen food cases, has been decided upon at the Freadrich Bros. Supermarket here as the answer to the current shortage of personnel, reported Proprietor Karl Meyer. The project also will meet the need for continued modernization to keep pace with competition.

Meyer pointed out that he lost five men to the armed forces during the past few months. A recent advertisement for a meat cutter brought six applicants, only one of whom was qualified for the job. This man was offered a job but failed to show up because his present employer hiked his wage to keep him from quitting.

The new installation will feature complete self-service in meats, the proprietor stated, although service meats will be available to customers wanting special cuts. Meyer, himself an experienced meat cutter, figures that he can cut enough meat to keep five packagers busy.

In order to further carry out the self-service idea, Meyer will add several frozen food vending cases to handle pre-packaged fish. Freadrich Bros., incidentally, has the reputation of being Lincoln's fresh fish headquarters, and the proprietor intends to maintain that reputation by turning heavily to sharp-frozen lines.

Meanwhile, Safeway Stores has completed three new supermarkets featuring self-service meat sections and refrigerated fresh vegetables in Lincoln, Omaha, and Council Bluffs. Each store also has 42 ft. of open dairy cases, 30 ft. of frozen foods display, and air conditioning.

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Penn Educational Shows Start Southern Tour In Memphis April 9-10

GOSHEN, Ind.—A new series of educational shows designed as a service to heating and refrigeration engineers and servicemen will begin in Memphis on April 9 and travel throughout the southern and southeastern states, according to R. H. Luscombe, general sales manager of Penn Electric Switch Co., here.

This show was created to give a dramatic visual demonstration in the use, construction, installation, and servicing of automatic controls. Included in the elaborate equipment are giant controls which actually operate, colored slides, and charts.

Although the current show is patterned after previous ones to some extent, it includes the latest current information and service helps, and it is expected to be even more beneficial to the trade.

Meeting are being arranged and sponsored in each city by local jobbers of Penn Controls. According to Luscombe, each meeting will give the most thorough demonstration of controls possible in a single evening. After the regular session, individual installation problems will be discussed.

HEATING CONTROL SHOW

At present the Penn "traveling" heating control show is scheduled to appear in the following cities: Memphis on April 9; Jackson on April 12; New Orleans on April 16; Mobile on April 19; Montgomery on April 23; Birmingham on April 26; Atlanta on April 30; Macon on May 3; Miami on May 9; Jacksonville on May 14; Savannah on May 17; Charleston on May 21; Columbia on May 24; Raleigh on May 28; Greensboro on May 31; Charlotte on June 4; Asheville on June 7; Knoxville on June 11; Chattanooga on June 14; Nashville on June 18; and Louisville on June 21.

REFRIGERATION CONTROL SHOW

The "traveling" refrigeration control show is scheduled to appear in the following cities: Memphis on April 10; Jackson on April 13; New Orleans on April 17; Mobile on April 20; Montgomery on April 24; Birmingham on April 27; Atlanta on May 1; Macon on May 4; Tampa on May 7; Miami on May 10; Jacksonville on May 15; Savannah on May 18; Charleston on May 22; Columbia on May 25; Raleigh on May 29; Greensboro on June 1; Charlotte on June 5; Asheville on June 8; Knoxville on June 12; Chattanooga on June 15; Nashville on June 19; and Louisville on June 22.

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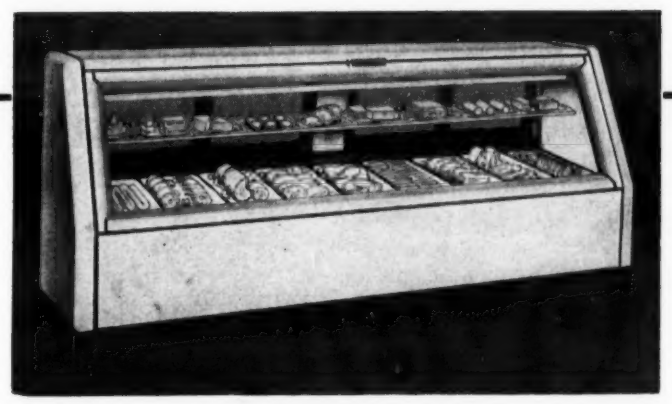
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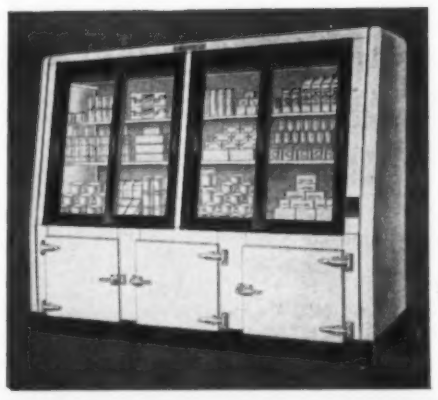
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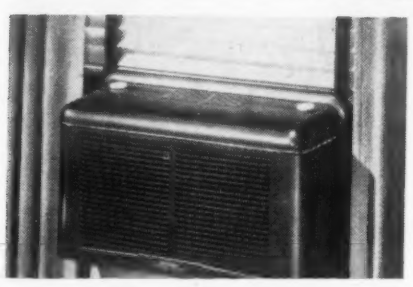

Mitchell's New Room Unit

A new 1-hp. window-type room air conditioner has been introduced by Mitchell Mfg. Co. The unit will retail for $469.95.

Capacity is rated at 11,500 B.t.u. per hr. It measures 16½ in. high, 28½ in. wide, and 26¾ in. deep and is finished in beige or ivory.

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ASHVE Symposium Reports On:

Proper Ventilation Following an Atomic Blast; Conditioning Found Effective In Post-Operative Care; Protection of Workers from Excessive Heat; Comfort Cooling

PHILADELPHIA — "Man and His Relationship to Air," the topic of a symposium conducted at the 57th annual meeting of the American Society of Heating and Ventilating Engineers here, ranged broadly over the wide field touching on such subjects as the value of air conditioning in hospitals and the effects of an atomic blast.

These were some of the points brought out:

Air conditioning aids in the treatment and recovery of hospitalized patients suffering from heart disease.

The current trend toward keeping rooms warmer and warmer may be dangerous.

Much research is required to establish standards for protection of workers in industry from excessive heat.

Close tolerances are necessary in the air conditioning system intended to provide optimum conditions for a group of people.

Radioactivity from an atomic explosion is not so important a factor in causing fatalities as is generally assumed.

Ably conducted by Nathaniel Glickman, assistant professor of medicine and research physiologist at the University of Illinois Medical School, who served as moderator, the symposium featured a panel of five speakers:

Dr. Eugene F. DuBois, professor of physiology at Cornell University Medical college; Dr. Robert W. Keeton, head of the Department of Medicine, University of Illinois; Charles S. Leopold, Philadelphia consulting engineer; Theodore F. Hatch, professor of industrial health engineering, University of Pittsburgh, and Capt. Oscar Schneider of the U. S. Navy Medical Corps and a member of the reactor development division of the Atomic Energy Commission.

Physiological Aspects of Heating and Ventilating

Concerning the physiological aspects of heating and ventilating, Dr. DuBois said it is difficult to establish standards for comfort that cover more than one narrow set of conditions.

"The factors to be considered are many," he pointed out. "Concerning the human subject: age, sex, clothing, previous activity, present activity, time of exposure, nationality, habit, acclimatization, etc. Concerning the room: dry bulb temperature, humidity, air movement, radiation, etc.

"The comfort zone is a relatively narrow band of temperature conditions where the heat loss from the body is most easily regulated to equal the heat production. There is little or no change in the temperature of the body tissue, no sweating, and the skin is about 91.5° F. At colder environmental temperatures the blood flow in the periphery is restricted and the skin is transformed from an active heat interchanger into a suit of leather clothing.

"Since one half of the body mass lies within 1-in. of the surface there is a large reservoir from which heat can be lost before the temperature of the core of the body is much affected.

"Above the comfort zone, as the air temperature gets higher and higher the blood flow in the skin increases rapidly. Sweating increases and finally the only possible channel of heat loss is vaporization.

"If a person who has been in a warm room with a high rate of vaporization goes into a cold environment there is a condensation of moisture in the cold layer of clothing. Some of this heat is returned to the body for a short time but later the rate of cooling is increased. When comparing two different environments the time element is important."

The regulation of body temperature, he indicated, is extremely complicated.

"There seems to be an inner thermostat, and also a feedback from the skin, which is an extremely sensitive thermometer.

Rooms Are Getting Warmer

"Until fairly recently people were accustomed to living in cold rooms, but now rooms are getting warmer and warmer. It is certainly a mistake to overheat stores and cars where people are wearing overcoats," he declared.

"It must be recognized, however, that an elderly person needs more heat than a younger person. Perhaps in our homes we need local heating for elderly people. Why should one overheat 100 tons of house and furniture in order to heat 100 lbs. of grandmother. Perhaps the answer is an electrically heated armchair for grandmother."

Discussing "Engineering Aspects of Comfort Data," Leopold declared that "the occupants of an office building are the last court of appeal on the acceptance of air conditioning. In an office if people say they're cold, they are cold despite what the instruments may say."

What Constitutes Comfort?

Chief consideration in determining comfort, he indicated, was "what conditions are comfortable for the most people in an office who don't have to pay for air conditioning and don't know a test is being conducted.

"The owner of residence who pays the heating or cooling bill can be comfortable at conditions that are not optimum," Leopold reminded the group.

Leopold's approach to the problem of comfort was admittedly a negative one, his definition being "the absence of discomfort and elimination of indoor annoyances."

However, he indicated, "there can be no condition best for everyone because people differ so in their habits.

Close Tolerances Required

"We have good knowledge of optimum conditions in an office, but the question is often asked as to why such close tolerances are required in an air conditioning system for an office."

The answer, he said, was that while individuals may have a tolerance of 5° to 6° over the effective temperature scale, these tolerances are not usually in the same range. Some may be lower, others higher. It's only in the center and within very narrow limits that the tolerances of all or most individuals overlap.

"I also want to caution against careless use of the mean radiant temperature factor in designing systems," Leopold added. "We should be more concerned with the symmetry of radiation."

He explained that a person sitting near a window could be warm on the side facing the interior of the building and cold on the window side. Although the mean radiant temperature might be at a satisfactory level, this individual would not be comfortable due to lack of symmetry in the radiation to or from him.

Another point made by Leopold that it is not necessary to change indoor temperatures from hour to hour in accordance with outdoor temperature changes as was formerly thought desirable.

75° F. Generally Satisfactory

"A 75° F. thermostat setting is generally okay for both summer and winter," he suggested.

In presenting his views on "Standards for Industrial Heat Control," Prof. Hatch said the ill effects of heat are so widely appreciated in industry, that even in those industries having no unusual heat production, comfort-conditioning is becoming common.

The limits of the thermal comfort zone are well established, he explained, and similarly the upper limits of tolerance to acute heat exposures have been fixed, both in the laboratory and in industrial experience. He said exposures in the traditional hot industries are now kept generally below this tolerance limit.

"Between the two limits of comfort and maximum physiological tolerance, however, there exists a considerable region within which many industries must operate—an area which is not well charted in respect to standards for the measurement of heat effects," declared Prof. Hatch.

"Beyond a general desire to reduce heat exposures as much as possible engineers do not find in this region an adequate, quantitative basis for estimating the benefits which are to be derived from further heat control in comparison with the cost of such improvements. The elementary physiological criteria which serve for measuring acute effects are of limited use in the region of non-acute response. Similarly, the subjective criteria of comfort are of little help when there is no practical possibility of reducing the thermal environment to this degree.

Industrial Health and Safety

"Responsibility for the health and safety of workers is met when the heat level is still high compared with the comfort limit. Below this level the problem is one of balancing the cost of control against the returns, measured in terms of increased efficiency and productivity and improved human relations. The potential benefits vary with the nature of the industry, increasing with the fineness of the work, the manual skills required and with the degree of concentration and mental effort involved.

"The area between the comfort zone and the physiological tolerance limit can be divided into three overlapping zones wherein the effects of primary concern may be classed successively as (1) physiological, (2) psychophysiological, and (3) psychological. In industry, the three subareas are of corresponding primary interest to these departments: (1) medical, (2) engineering, and (3) management (industrial relations).

"The need exists for thermal physiologists and experimental psychologists to orient their work more toward industry, to provide a quantitative basis for defining and evaluating the varying heat effects and for establishing useful thermal standards

(Concluded on next page)

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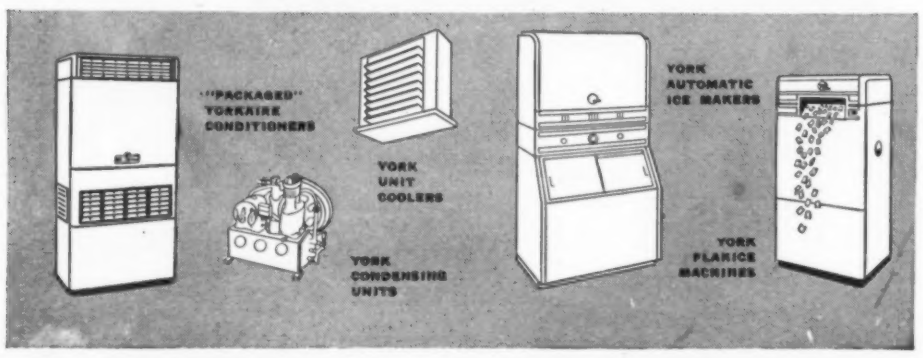

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ASHVE Symposium Covers Air Conditioning's Role In Medicine, Industry, Comfort Cooling

(Concluded from preceding page)

between the upper limit of physiological tolerance and the lower limit of simple comfort, where no problem exists."

There's also the question, he said, of determining the effects of long-term exposure to the upper limits of human tolerance.

Air conditioning's role in the treatment of prevention of disease is an important one, according to Dr. Keeton, but he pointed out that it has not proved effective in eliminating colds.

"Respiratory tract infections and the common cold cause so much morbidity that they have become a major public health problem," he declared. "And while ultra-violet rays and glycol have had pronounced lethal effects in the laboratory, the results have not been so effective in practical application."

Avoid Drafts To Avoid Colds

He suggested that air conditioning systems should be designed, however, to avoid drafts which apparently set off the "trigger-mechanism" which causes colds.

In other ways, though, air conditioning has definite therapeutic value, it was indicated. Experience has shown, he said, that residence of 48 hours in an air conditioned recovery ward avoids post-operative complications suffered by patients whose heat regulating mechanism is altered by anesthesia.

"In the summertime, when the humidity is high, post-operative patients commonly develop heat retention which, if unrelieved, leads to heat strokes," said Dr. Keeton. "This causes adrenal stimulation and if long continued, presumably adrenal exhaustion.

"In a study of convalescence it was noted that post-operative patients maintained in comfortable environment made unusually good recoveries. Patients producing extra heat as a result of hyperthyroidisms may slip into an hyperthyroid crisis. The latter is prevented or ameliorated by exposure to cool, dry air.

Heart Patients Respond

"In the waves of hot humid weather patients with heart disease are quite prone to die. The primary difficulty seems to be inability to transport heat to the surface due to circulatory impairment. Heat retention and death follow. This can be prevented by exposure to comfortable or cool dry environments.

"In paients with coronary sclerosis, dehydration as the result of excessive sweating may precipitate a blood clot (coronary thrombosis) at the site of an arteriosclerotic plaque.

"More recently the reduction to 92° F. of the rectal temperature of children with congenital heart disease, who have a limited capacity for oxygenating their blood, has made it possible to operate some seemingly inoperable cases."

Dr. Keeton pointed out, too, the recognized value of air conditioning for premature babies and its use in operating rooms.

Considerable research along some of these lines can be started, he indicated, when a new building of the University of Illinois hospital is completed. Now under construction, the building will house a metabolic ward which will be completely air conditioned.

"After all," he emphasized, "animals in the pharmaceutical houses are air conditioned. Why not human subjects, too?"

Post-Atomic Blast Problems

In his talk on "Problems Following Atomic Blasts," Capt. Schneider said only 15% of the fatalities due to an air burst of an atomic bomb which came without warning would be the result of radiation illness.

The remaining 85% of the deaths would be due to wounds and burns, he explained. Although an air burst would cause more casulties than a ground surface blast or underwater explosion, there is virtually no lingering radioactivity from an atomic bomb that explodes in the air, he declared, adding that after 90 seconds the radiation effects from this type of explosion are no longer a source of danger.

"To provide a simplified picture of a broad and complex subject, it is best to regard the casualty-producing effects of an atomic explosion as being largely dependent on its ability to produce mechanical destruction," Capt. Schneider said. "Thus, in the event of an air burst such as those employed in Japan, it can be expected that most of the fatalities will occur among persons who are injured by the collapse of buildings and houses, and by being unable to escape from the fires which sweep such ruined structures.

"In a ground surface burst, the area of blast damage will be less than in an air burst, and the number of casualties will therefore be less. In the event of an underwater burst, the damage from the blast, as well as from fires will be still less, and so will the number of casualties.

Not as Serious as It Seems

"Radioactivity from an atomic explosion is serious, but not by any means serious enough to justify all the worry it has occasioned."

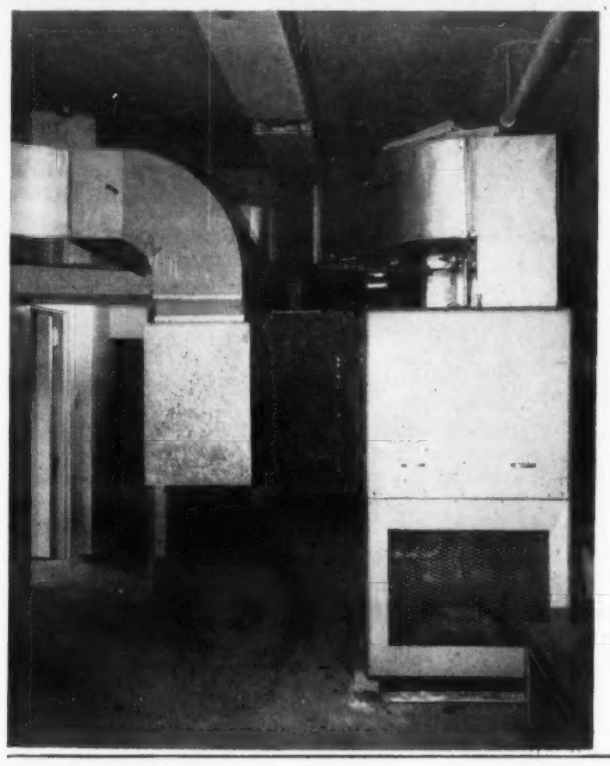
Owing to the deposit of fission products and unfissioned atoms of bomb material on the ground or in the water, radiation injuries may form a greater percentage of casualties from a ground or underwater burst, he declared, adding however, that this percentage can be reduced by an effective civil defense organization.

"Properly designed ventilation systems, in buildings and shelters," said Capt. Schneider ,"can also reduce this radioactivity hazard."

When the symposium was thrown open to general discussion, one of the first comments came from Dr. W. F. Wells, who questioned some of Dr. Keeton's remarks concerning air conditioning's effect on bacteria. Dr. Wells cited an instance where there was a mortality rate of 27% in the children's ward of one hospital prior to the installation of air conditioning.

"After an air conditioning system bringing in outside air was installed for this ward, the mortality rate dropped to only 5%," Dr. Wells said.

N. Y. Example of What Can Be Done



CLOTHING STORE (Shulster's, New York City) has installed a UsAirco 15-ton Kooler-aire unit which both heats and cools. It contains a built-in evaporative condenser for water conservation.

Use In Pediatrics

Dr. Keeton agreed that "it's accepted that air conditioning has shown good results in pediatrics wards. Children spend all their time in these wards, but this doesn't work with adults who don't spend all their time in that air conditioned atmosphere."

Here Lester T. Avery, retiring president of ASHVE, suggested the possibility of long-term experiments in prisons where men are confined continuously.

Another question raised was whether filters would be justified for air supply systems in A-bomb shelters to reduce "contamination" effects of radiation.

"If we do have shelters, I feel they would have to be properly ventilated to withstand possible contamination," Capt. Schneider said. "Perhaps, though, there could be a closed ventilating system."

no other refrigeration control gives you all these features

- ★ Double-pole construction provides versatility of application.
- ★ Direct-reading, visible calibrated scale shows directly the operating cut-in and cut-out points . . . no addition or subtraction.
- ★ Once set, the setting remains permanent . . . vibration or mounting position does not affect calibration or accuracy of performance.
- ★ Full range of differential adjustment.
- ★ Sturdy contact mechanism. Large steel-backed silver contacts, electrically welded to beryllium copper strips, have high current capacity without sticking.
- ★ Heavy-duty block assembly with terminals molded internally for strength and permanence . . . generous terminal barriers and wire retainers.
- ★ May be mounted in any position by standard mounting holes in back of case or by universal mounting bracket.
- ★ Pressure and temperature models for all applications.

Get the full story on the PENN Series 270 . . . the first and only load-carrying 2-pole switch in the refrigeration field. Ask your wholesaler or write **Penn Electric Switch Co., Goshen, Indiana.** Export Division: 13 E. 40th St., New York 16, N. Y., U.S.A. In Canada: Penn Controls, Ltd., Toronto, Ontario.

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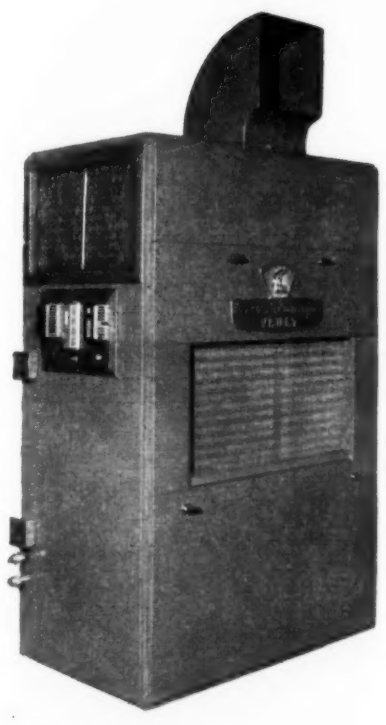
VAULTMASTER

for Fur and Woolen Storage Vaults

A limited number immediately available



It is portable. It can be moved through standard size doors, into vault room. Simple electric and water connections. Here are the FOUR ESSENTIALS in ONE compact unit, Refrigeration, Dehumidification, Fumigation and Ventilation. It is approved by Underwriters Laboratories for use in fur storage vaults. Very low operating cost. Build up vault units as your volume grows. There is a Haertel Vaultmaster in two, three and five-ton capacity.

CONSIDER these features:

1. Absolute Humidity control.
2. Automatic refrigeration.
3. Continuous temperature control.
4. Positive fumigation.
5. Filtered ventilation.
6. Approved by Underwriters Laboratories, Inc.

HAERTEL is a well and favorably known name in the Fur Storage and Fur Cleaning field. The Haertel organization will collaborate with you on engineering, supplying detail drawings and any other help needed in sales and installation of the VAULTMASTER and other Haertel equipment. Your inquiries are invited.

WALTER HAERTEL COMPANY

2840 FOURTH AVE. S., MINNEAPOLIS 8, MINN.

Refrigeration Problems

and their Solution

by Paul Reed

For Service and Installation Engineers

Paul Reed

Some Electrical Questions

QUESTION: What is a "resistance start" motor? I have been told that the motors used on hermetic units are "resistance start" motors. Also, I have heard them called "split-phase" motors and "condenser" motors. Which is correct, or is there some difference?

ANSWER: This is a rather long story; somewhat too long to give here at this time. To fully understand why a single-phase motor develops starting torque, it is necessary to understand impedance, reactance, and resistance and their bearing on "phase angle" and "power factor." These matters were covered in the series of articles in this column entitled "Electric Currents," that appeared in the issues Dec. 23, 1946, to Feb. 3, 1947, inclusive. This series is included as Chapter 59 in Volume J-3 of "Refrigeration Problems," now in book form.

TERM 'RESISTANCE STARTING' NOT CORRECT

Briefly, however, the term "resistance starting" as applied to single-phase motors, is not correct, although it is often used.

The split-phase and the condenser-start motors are practically the same as far as the motor itself is concerned. The split-phase motor has a main and a starting winding in the stator and it has no winding on the rotor.

In starting, both windings are in use, but when the motor gets up to about two-thirds speed, a relay (in the hermetic type or a centrifugal switch inside the motor, in the open-type motor) opens and takes the starting winding out of use. From then on, up to full speed and while the motor is running at full speed, only the main winding is in use.

This type of motor can start and bring up to speed about 1¾ times as much as its full load rating, which is what it can carry continuously. Under normal conditions, this is enough for starting a compressor *if* the suction and head pressures have been equalized either by a capillary tube or an unloader valve.

Practically all household refrigerators now use capillary tubes, so the split-phase motor has enough starting torque or "power" for the household refrigerator, small water cooler, and other small capillary tube systems.

If this motor is turned on before the two pressures are equalized, it is apt to stall and blow the overload protector, for it takes from four to six times as much torque to start a compressor as the motor will carry continuously, *if* the suction and head pressures are not unloaded; that is, if the suction pressure is low, say just a few pounds, and the head pressure is high, say a hundred pounds or more.

STARTING CAPACITOR CONNECTED WITH STARTING WINDING

So in order to give the split-phase motor that extra starting torque, necessary for expansion valve or float valve systems that do not equalize pressures during the off cycle, an electrical condenser or "capacitor" is connected in with the starting winding.

The split-phase motor with the capacitor added is now called a condenser-start or capacitor-start motor, and it can start and bring up to full speed three to five times as much load as it can carry continuously.

Essentially, the capacitor-start motor is a split-phase motor with a capacitor added, and many times it is possible in the field to add a starting capacitor to a split-phase motor and thereby give it a great deal added starting torque. However, the motor manufacturer does make some design differences between the split-phase and the capacitor-start motors, in order to get maximum results.

Without the starting winding, the split-phase motor is unable to get started at all. The starting winding gives the necessary starting torque because it causes the current to lag behind the voltage in the starting winding and thus produce an effect, as far as starting torque is concerned, much the same as if there were two currents, one "out-of-phase" or lagging the other, as in a two-phase motor.

The starting winding does this because of its inductive effect or inductive "reactance" rather than its resistance. Resistance only, does not cause a lagging or leading current. It takes "inductance" produced by a coil, or "capacitance" produced by a capacitor (an electrical condenser) to do that.

The split-phase motor gets its name from the fact that its starting winding "splits the phase" and produces the effect of a two-phase current.

The capacitor-start motor also splits the phase, but it goes further. If we wanted to be more specific and more exact, we might call a split-phase motor an "inductive-start" motor.

PROTECTING ELECTRIC MOTORS

QUESTION: We recently sent our serviceman on a service call on a household refrigerator with an open-type unit and a low-side float. He found the ⅙-hp. motor burned out. He checked the compressor, pressures, wiring, etc., but found nothing wrong. The motor was rather old, so he replaced it with a good rebuilt ⅙-hp. motor of the same type. The fuse was a 6 ampere, so he left it alone.

When he came back in a few hours to check it, he found the motor again burned badly, had thrown solder, etc.

Now why didn't the 6 ampere protect this motor? We can't go around and put two-button thermostats on all the refrigerators like this; there are hundreds of them. What can we do to give better protection to these old jobs?

ANSWER: The answer to your problem involves a knowledge of the relative amounts of current drawn by an electric motor on starting and during the running period.

An electric motor under full load takes several times as much current to get started and up to full speed as it does running at full speed and with the same load. That is, if you have a motor connected to a compressor, that motor will draw from three to six times as much current during the time the motor is getting up to full speed as it does after it has got up to full speed and running normally.

For example, a ⅓-hp. 110-volt capacitor-start induction-run motor draws about 17 amperes at the instant it is turned on. As the motor picks up speed, this amount of current is reduced, until at nominal speed and carrying full load, it draws about 3½ amperes.

If this getting-up-to-speed takes only a few seconds, the extra amount of current does not have time to overheat the motor and burn it out, but if for some reason, such as a tight compressor, tight belts, or under-voltage, the motor cannot get up to full speed in a very short time, it may draw 5 or 5½ amperes for quite a long while, which represents 50 or 60% overload, and this may be enough to burn the motor out. If the line is equipped with a 6 ampere fuse, it will not blow with the current of 5 or 5½ amperes, but the motor can burn out with the current 5 or 5½ amperes.

A fuse blows quickly on heavy overloads, but the 17 amperes was little more than instantaneous and even the fuse would stand that; but if the current stayed above 6 amperes for even a very few seconds, the fuse would blow. You must therefore use a fuse that is much greater than the ordinary running current of a motor in order that it will not blow while the motor is starting.

ORDINARY FUSE GIVES LITTLE MOTOR PROTECTION

As a matter of fact, an ordinary fuse gives very little protection to a motor. It protects the line against shorts and grounds, but gives almost no overload protection to the motor.

What is needed is a device that gives a time delay; that is, something that will carry, let us say, 4 amperes indefinitely and will carry a great deal more than 4 amperes for perhaps 10 seconds or so. Such a device will carry the heavy currents long enough to enable the motor to get up to speed even though it takes quite a little while, but after the motor does get up to speed, it gives adequate protection, for it will blow on very small sustained overloads.

Such a device is called an inverse time element thermal overload relay; that is, the amount of current it will carry is inversely proportional to the length of time it will carry it.

Present-day motors up to 1 hp. are nearly all protected by built-in inverse time element overload relays, ordinarily referred to as "overload protectors." They are mechanical contrivances that open on overload and stay open until the motor and the overload device cools and then they close and "automatically reset" themselves and allow the motor to run again. The safest way, therefore, is to use only the new type motors that are equipped with these overload protectors.

LINE TYPE MOTOR PROTECTORS

The next best thing is to use an overload protector in the line to the motor, instead of having it in the motor itself. In the line, it is affected only by the excessive current that is drawn because of overload, but if it is in the motor itself, the overload protector responds to excessive current and excessive motor heat which is what actually damages the motor.

Several manufacturers offer line-type motor protectors that give this time-delay action and can thus protect the motor much better than a mere fuse. Some controls, such as the "two-button thermostats" incorporate an overload protector of the line type.

FUSETRONS AND FUSESTATS

Fusetrons or fusestats also operate on the time delay principle and therefore give effective protection if properly selected and applied.

At present, only single-phase motors are available with built-in motor protector.

Three-phase motors with built-in motor protectors are needed, especially in the small horsepower sizes for automatic equipment not regularly cared for by maintenance personnel.

It will require that the motor-protector break at least two of the three lines, and this will require some type of relay, but it does not seem an insuperable difficulty; so some day we should have three-phase motors with built-in overload protectors.

Don Cornell To Manage New Orleans Branch

BEAUMONT, Tex.—Don Cornell, former manager of the Beaumont branch of Standard Brass & Mfg. Co., has been transferred to manage the New Orleans branch, it was announced here recently.

Don Cornell

George Brown, who has been a salesman for the Beaumont division for the past five years, has taken over as manager.

At the same time, it was announced that a new branch was opened in Lafayette, La., to operate under the supervision of the Beaumont sales division. Harold Cummings is the local manager and Forrest C. Williams is the inside salesman.

Goulding Elected Vice Pres. Of Liquid Carbonic Corp.

CHICAGO — The Liquid Carbonic Corp. announced recently that Byron W. Goulding, manager of the Carbon Dioxide Division, has been elected a vice president of the corporation. He will headquarter at the corporation's New York office.

Goulding joined Liquid Carbonic in Omaha, Neb., in 1935 following his graduation from the University of Nebraska. Upon his return from four years' service as a lieutenant colonel in the Air Force, he rejoined the company at New York City.

MISSING SOMETHING?

More and better useful information is yours for the asking. See "What's New" page. Use Key No. for fastest service.

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Like a flat tire, flat door gaskets are inefficient.

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For lasting customer satisfaction install JARROW gaskets.

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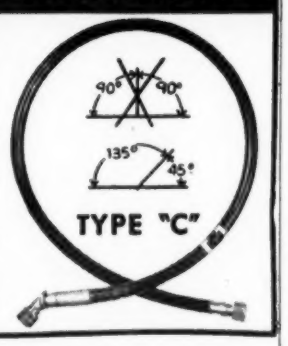
FLEXIBLE, DOUBLE-ANGLE ACCESS, DURABLE—*YET LOW PRICED!*

NEW ANGLE CHARGING HOSE

WITH 45° "E-Z-FLO L-BO"

● Offers two angles of approach, 45° and 135°. Easier access, less flow resistance. 36" rayon-reinforced refrigerant-resistant neoprene hose withstands pressures of 1000# psi. 1-piece flare construction, coil spring support, fingertip "Rapid" Coupler.



Your Wholesaler has Types A & B charging hose, too!

Fine PRODUCTS CO. 185 N. WABASH AVE. CHICAGO 1, ILLINOIS

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... for the best in Refrigeration Replacement Controls

Here, in one easy-to-locate source, you'll find listed the exact Ranco control for more than 4,000 replacement installations! Conveniently listed are all refrigeration manufacturers *and trade names,* as well as the Ranco Replacement Control code number.

Now you can *replace it right* with a precision-built Ranco control. Save shopping all over town.

RANCO REPLACEMENT REFERENCE NO. 1244

Copies of this helpful reference are available only through Ranco wholesalers.

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WORLD'S LARGEST MANUFACTURERS OF REFRIGERATION CONTROLS

speaking about

TRADE-INS

is a spiffy new 24-page booklet just published by the NEWS. It presents you with some fresh, dandy ideas on how to help eliminate one of your perennial bugaboos, the "trade-in" problem.

The whole problem is divided into three categories and some sound, sensible methods on how to deal with each category are described. 1. Acquiring the "trade-in" and determining its worth. 2. Reconditioning the "trade-in." 3. Marketing the "trade-in."

The whole contents of this booklet is compiled from the best articles on and experiences of other appliance dealers whom the NEWS has talked to in the past year. These ideas are actually used successfully and perhaps they would work as well or better for you. At least you can read about them and see how they fit in with your operation.

The booklet sells for 50¢ a copy. Order now! Use this coupon.

Business News Publishing Co.
450 W. Fort St., Detroit 26, Mich.

Please send me ..... copies of your new booklet "Speaking About Trade-Ins," at 50¢ per copy.

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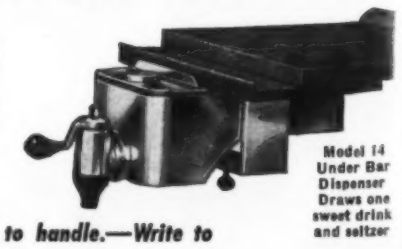
3-19-51

DEALERS - DISTRIBUTORS WANTED!

If you are prepared to handle sales, installation and service for our stainless steel soft drink Dispensers for Bars and Taverns, advise business experience and some facts relative to your financial ability.

INCREASES PROFITS FOR BARS AND TAVERNS



Model 14 Under Bar Dispenser Draws one sweet drink and seltzer

Exceptionally profitable to handle.—Write to

MULTIPLEX FAUCET CO. 4326 DUNCAN, Dept. ARN-14, ST. LOUIS, MO.

MANUFACTURERS OF SOFT DRINK DISPENSERS OVER 45 YEARS

Second Quarter Metals Cuts--

(Concluded from Page 1, Column 5)

There are two classes of fabricators: One group is that which takes ingots and makes them into basic shapes like tubes, plates, strip, rods, etc. The second class is anyone that takes these basic shapes and changes them directly in any way. An example, is a firm that would take tubing and bend it into a refrigerator evaporator.

However, the man who buys the evaporator is not a fabricator. He is an assembler, and is not directly subject to the 75% restriction. However, all purchasers of copper in the forms designated in Order M-12 must certify that they are purchasing in accordance with the provisions of M-12.

Theoretically, then assemblers are free to line up fabricating companies to supply them with extra copper and aluminum if such sources can be found. Actually, this will probably be impossible, as most fabricators have been on a strict allocation basis for many months.

• • •

Provisions of M-47 Order on Steel

The following is the text of the vital provisions of the NPA order on steel, M-47, which establishes the amount of steel available for manufacturers of certain products specified in the order.

[NPA Order M-47]

M-47—USE OF IRON AND STEEL

Sec. 2. Definitions. As used in this order:

(b) "Base period" mean the 6 months' period ending June 30, 1950.

(c) "Manufacture" means to put into process, machine, fabricate, or otherwise alter materials by physical or chemical means.

(d) "Conversion steel" means steel mill products which have been obtained by the consumer in consequence of the consumer or some other person having furnished, directly or indirectly, to one or more steel producers or converters, steel mill products in a less finished form such as, but not limited to, ingots, blooms, billets, slabs, rods, skelp, and hot rolled sheets in coils for the express purpose of procuring such steel mill products.

Sec. 5. Use of iron and steel products in consumer durable goods. (a) Subject to the exemptions stated in section 6, and unless specifically authorized in writing by the National Production Authority, no person shall use during the calendar quarter commencing on April 1, 1951, in the manufacture of any item included in List A at the end of this order a total quantity by weight of iron and steel products in excess of 80% of his average quarterly use of such materials in the manufactured item during the base period: **Provided, however,** That such use in any one month shall not exceed 40% of the permitted quarterly use.

However, if such person has changed since July 1, 1950, or hereafter changes, from the manufacture of any part made wholly or partly from iron or steel products to the purchase of such part, he shall make a deduction from his total permitted use of iron and steel products under this paragraph in an amount equal to 80% of the material which he used in the manufacture of such part during the base period.

During the calendar quarter commencing on April 1, 1951, any person who does not use any iron or steel product in the manufacture of an item in List A but who assembles parts made wholly or partly from such material into such item shall not assemble a total number of units of such item in excess of 40% of the number of such units which he assembled during the base period.

(b) Any person who, during the 6 months' period ending December 31, 1950, used conversion steel in the manufacture or assembly of any items included in List A shall, during the calendar quarter commencing on April 1, 1951, use conversion steel in the manufacture or assembly of such items to the extent stated in this paragraph. The ratio between conversion steel and total steel so used by such person shall not be less than the ratio between conversion steel and total steel received by him during the 6 months' period ending Dec. 31, 1950:

Provided, however, That in the alternative and in the event it is not practicable to determine the quantity of conversion steel used in the manufacture or assembly of items in List A, the relationship between conversion steel and total steel shall be as follows: The ratio between conversion steel and total steel used in his total production, including all items in List A, shall not be less than the ratio between conversion steel and total steel received by him during said period. Any person who selects and applies either of the alternatives above stated may not subsequently apply the other alternative without the written approval of National Production Authority.

Sec. 6. Exemptions. (a) The manufacture or assembly of any item in List A to fill rated orders, or to meet any mandatory order of the National Production Authority, is permitted in addition to the manufacture or assembly permitted by section 5.

(b) Section 5 does not apply to persons who use less than 100 short tons of iron and steel products in any calendar quarter. However, any person who by reason of the provision of section 5 would be permitted to use less than 100 short tons of such materials during any calendar quarter, may use during such period a quantity up to 100 short tons: **Provided,** That notwithstanding the foregoing, no person shall use during the calendar quarter commencing April 1, 1951, in the manufacture or assembly of any items included in List A a total quantity by weight of such materials in excess of his average quarterly use thereof for such purposes during the base period.

Sec. 7. Application for adjustment. Any person affected by any provision of this order may file a request for adjustment or exemption upon the ground that his business operation was commenced during or after the base period, or because any provision otherwise works an undue and exceptional hardship upon him not suffered generally by others in the same trade or industry, or its enforcement against him would not be in the interest of the national defense or in the public interest. Each request shall be in writing and shall set forth all pertinent facts and the nature of the relief sought, and shall state the justification therefor.

LIST A

(See Section 5)

HOUSEHOLD APPLIANCES

All household type appliances (electric, gas, and other) and their accessories including, but not limited to:
- Automatic food and garbage disposal units.
- Carpet sweepers.
- Cooking and heating appliances such as broilers; coffee percolators, urns, and makers; portable electric space heaters; roasters; stoves, ranges, and hot plates; toasters; waffle irons and sandwich grilles.
- Dishwashing machines.
- Fans, 16 in. or under.
- Floor waxers and polishers.
- Food preparation appliances such as electric mixers, juicers, blenders, and squeezers.
- Hot water heaters, domestic residential type.
- Irons.
- Laundry equipment such as driers, ironers, wringers, and washing machines.
- Lawnmowers, rollers, seeders, and tampers.
- Portable lamps, lamp holders, and lamp bases including but not limited to:
  - Floor, bridge, torch, table, pin-up, and boudoir lamps; exclusive of industrial, commercial, therapeutic, and institutional specialty designed lamps.
- Radio receivers, home, portable, and broadcast band automobile receivers; television sets, phonographs, record players, and combinations.
- Refrigeration equipment such as household refrigerators; home and farm freezers under 13 cu. ft. capacity; packaged air conditioning units (window and console types), ¾-hp. and under.
- Vacuum cleaners.
- Water softeners.

NPA Authorizes Building

LOUISVILLE, Ky.—The National Production Authority has given the green light to the addition of 19 floors to the four-story Martin Brown building at Fourth and Broadway, here. The addition, to cost approximately $3,500,000, will make the building the tallest in Louisville. It will be air conditioned.

Jeffrey of Detroit Dies

DETROIT — Eugene Jeffrey, veteran local refrigeration contractor who operated Refrigeration Equipment Rebuilding Co. here, died of a heart attack here March 11. He was 48.

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If you are planning to move or want the NEWS sent to a different address, please use this coupon. Saves time and assures you uninterrupted service. Copy old address from NEWS wrapper if possible.

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This information helps us to make the NEWS serve you better.

Send to: AIR CONDITIONING & REFRIGERATION NEWS, 450 W. Fort St., Detroit 26, Mich.

Copper Order Eased--

(Concluded from Page 1, Column 4)

whether or not copper can be used in air-cooled condensers. Use is permitted in "complete condensing units less condensers," but manufacturers are asking "how can you have a condensing unit without a condenser?"

Copper cannot be used in shell and tube or shell and coil condensers (except water courses, either straight or finned tube, where the refrigerant is in contact with the tube), and it cannot be used in shell and tube or shell and coil water chillers (except water courses, either straight or finned tube, where the refrigerant is in contact with the tube).

Refrigerator for Blood Bank Given by Neb. Elks Club

KEARNEY, Neb.—A donation of $900 was made by the Elks Lodge here to purchase a special refrigerator for a permanent blood bank to be administered by the Buffalo County Medical Association. The refrigerator will be housed at the Good Samaritan hospital in Kearney and was expected to be in operation by the first of March, with blood from the bank to be available for use of all hospitals and physicians in the county.

MORE INFORMATION?

Use Handy Coupon on "What's New" Page of this issue

Phoenix Fair To Be Devoted Exclusively To Freezers, Frozen Foods, Refrigerators

PHOENIX, Ariz.—Appliance Merchandisers Association has announced that its first annual Food Freezer Fair will be held at the Shrine Auditorium here March 23-25.

Said to be the first of its kind ever held in Arizona, the show will be devoted entirely to the display of 1951 model home freezers and refrigerators and the latest trends in frozen food products.

EASTER IS THEME

In addition to the displays, features of the fair will include demonstrations, four entertainment shows daily, a beauty contest, and door prizes. Advertisements and publicity tie in with Easter, stressing the theme "Follow the Easter Parade to the Food Freezer Fair."

Demonstrations showing the ease and convenience of preparing complete family meals with frozen food products will be made each afternoon and evening under the supervision of Ruth Kruger, home service director for Central Arizona Light & Power Co.

Each of the local distributors for 16 freezer manufacturers will be represented by an entrant in the beauty contest. On the opening night, "Miss Food Freezer for 1951" will be chosen by a panel of judges.

Exhibitors are restricted to manufacturers, distributors, or exclusive representatives of all makes of freezers, refrigerators, and frozen food display equipment; manufacturers or distributors of commercially-packed frozen foods; processors of meats, dairy products, and other refrigerated foods; locker plants; and manufacturers or distributors of packaging materials or other equipment having some connection with the frozen foods or refrigeration industries.

Grand opening of the non-profit show is set for 3:30 p.m. Friday, March 23, with the doors closing at 10 p.m. Hours on Saturday and Sunday are 1 p.m. to 10 p.m.

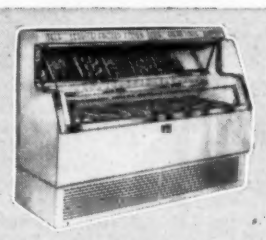
Among other ways, the fair will be promoted through a special edition of the *Phoenix Sun*, to be distributed March 22. From its cover to page 16, this edition will sell the advantages of attending the show.

LIVE TELECASTS

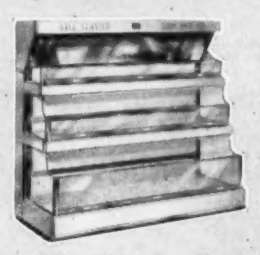
In addition, KPHO-TV has scheduled live telecasts of the fair on one or more days. All local radio stations have been invited to originate programs from the auditorium during the event.

Also, the association is devoting March advertising in the *Phoenix Gazette* and *Arizona Republic* to food freezers and refrigerators. Advertisements have also been run during the month in the valley weekly papers.

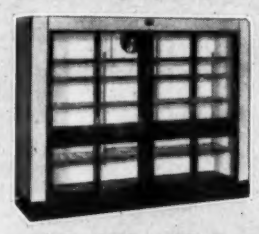
Members of the show committee are Don Morgan, Al Jennings Co., chairman; Tom Eldridge, A. S. Mehagian Furniture Co.; Bud Cummins, Midland Specialties; Clyde Lathrop, Pantry Frozen Foods Co.; and Gene Gladden, Valley Furniture Co.



MODEL 1407. Self-service frozen food display case. Attracts and handles more buyers, invites more sales.



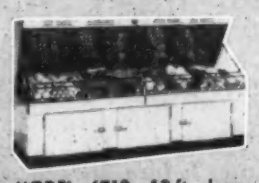
MODEL 306. The sensational open case with THREE refrigerated shelves. For profit-making impulse sales.



MODEL 3508. Wall Type Display Case. For self-service display of dairy products or beverages.

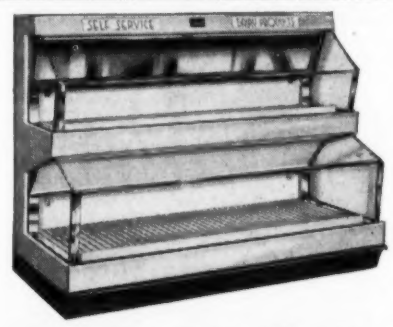
MODEL 3865. A 65-cu. ft. reach-in refrigerator. One of the four popular Koch reach-in cabinets.

THE QUALITY REFRIGERATOR LINE



MODEL 6710. 10 ft. long open front case with extra wide display shelf. Ideal for produce display.

SERIES 3100. Endless top display cases, 7 and 10 ft. long. Set up in any length for profit displays.



DOUBLE

DOUBLE dairy sales with the DOUBLE featured KOCH 206! Extra capacity for staples on the low level keeps traffic in front of the spotlighted eye-level shelf *where impulse buying gets the top billing*. Double the impact, too, with complete visibility, brightly lighted shelves and signs and full length polished plate glass mirror. Welded steel construction . . . fadeproof porcelain and polished plate glass front . . . trimmed with stainless steel.

YOUR

You're way ahead with the new 206! 12 feet of shelving in a 6-ft. case, correctly sized for island displays. Removable ends for easy joining—*plus* dependable KOCH refrigeration.

MONEY

Put your money in a KOCH case and you'll DOUBLE your dividends with faster, easier selling. KOCH quality insures low-cost operation and many years of trouble-free operation.

KOCH REFRIGERATORS

SINCE 1883 NORTH KANSAS CITY 16, MO.

SEND THIS COUPON *today* FOR FULL DETAILS

KOCH REFRIGERATORS
North Kansas City 16, Missouri

Please send me at once complete details on your dealer proposition. I understand several attractive territories are available. RN 3

Name.....

Address.....

City.....Zone.....State.....

Government Contracts

DEPARTMENT OF DEFENSE

Description	Quantity	Invitation No.	Opening Date
Yards And Docks Supply Office Porthueneme, Calif., Attn: Procurement Division			
Compressors	4 items	22979	19 Mar 51
Spare Parts For Compressors	2 items	22979	19 Mar 51
Repair Parts-Code 505 International Harvester	217 items	23388	26 Mar 51
Supply Officer, Philadelphia Naval Shipyard, Philadelphia 12, Pennsylvania, Attn: Purchase Section			
Gauges-Pressure & Test Navy Dept Spec 45-G-10-Lens To Be In Accord With Mil Spec Mil-P-6886	243 ea	Ships-1983	26 Mar 51

GENERAL SERVICES ADMINISTRATION

Description	Quantity	Reference No.	App. Bid Date
Chief, Purchase Division, Federal Supply Service, General Services Administration, Region III, Room 7101, 7th and D Sts., S. W., Washington 25, D. C.			
Cooler, Water, Ice-Cooled, Inverted Bottle Type	28 ea	10W-97693 -R	3-23-51

U. S. DEPARTMENT OF COMMERCE

Description	Quantity	Reference No.	App. Bid Date
Chief, Procurement Section, National Bureau Of Standards, 620 - 11th St., N. W., Washington 25, D. C.			
Remove Existing Ammonia Refrigeration Equip & Replace Same With Freon System Room 17 E Bldg.	for the job	B-1-2190-51	3-19-51

DEPARTMENT OF INTERIOR

Description	Quantity	Reference No.	App. Bid Date
U. S. Bureau Of Mines Petroleum And Oil-Shale Experiment Station, Box 621, Laramie, Wyoming			
Temperature Recorder, 12 Point Electronic	1 ea		3-27-51

CONTRACTS AWARDED AS OF MARCH 7, 1951

Description	Quantity	Dollar Value	Contractor and Address
Ships Parts Control Center, Naval Supply Depot, Mechanicsburg, Pennsylvania			
Temperature Regulators And Various Repair Parts	7.317	178,428.00	Robertshaw-Fulton Controls Co. Fulton Sylphon Div. Knoxville 4, Tenn.
Thermometers-Dial & Industrial	13088	104,973.00	American Machine & Metals Inc. Gotham Instruments Division 233 Broadway New York, N. Y.
Electric Motors and repair parts	13978	53,365.00	Wagner Electric Corp. 6400 Plymouth Ave. St. Louis, Mo.
Various repair parts for measuring instruments	8860	33,463.00	Minneapolis-Honeywell Regulator Co. Brown Instruments Division Wayne and Windrim Ave. Phila., Penna.
U. S. Navy Purchasing Office, 180 New Montgomery Street, San Francisco, California			
Services, equipment and material to unload, receive and store material in Cold Storage Plant	13,100,000 lbs. 25,000 boxes	50,000.00	Security Warehouse & Cold Storage Co. 350 N. First St., San Jose, Calif.
Department Of The Navy, Bureau Of Aeronautics, Washington 25, D. C.			
Indicator, Thermometer	1,207	45,840.00	The Lewis Engr. Co. Naugatuck, Conn.
Department Of The Navy, Bureau Of Ships, Washington 25, D. C.			
Pumps, Complete With Motors And Controllers	40	197,552.00	Buffalo Pumps, Inc., 450 Broadway Buffalo, N. Y.
Condensing Unit, Equip.	12	150,000.00	Carrier Corp., Marine Dept. 385 Madison Ave. New York 17, N. Y.
Row RC Finned Tubes	8,274	100,000.00	Combustion Engineering Superheaters, Inc., 200 Madison Ave., New York 16, New York
Officer In Charge Of Construction, Public Works Office, Fifth Naval District, Norfolk 11, Virginia			
Repairs And Replacement for Air Conditioning System, U.S. Naval Base, Norfolk, Va. Contract NOy-22384		45,216.00	E. K. Wilson & Sons, Inc., 3314 DeBree Ave., Norfolk, Va.

United States Air Force

Temperature Indicators, cl-05D—Weston Electrical Instrument Corp., Newark, N. J.
Filters, cl-16A—Neptune Electronics Co., New York, N. Y.
Temperature Bulbs, cl-05D—Lewis Engineering Co., Naugatuck, Conn.
Dryers, cl-10B—Morse Instrument Co., Hudson, Ohio
Dehumidifier Kits, cl-10B—Daly, Merritt & Sullivan, Inc., Washington, D. C.
Dryers, cl-10B—Pako Corp., Minneapolis, Minn.
Fitting Assemblies, cl-04A—Weatherhead Co., Cleveland ,Ohio
Dehumidifiers, Kits, cl-10B—Daly, Merritt & Sullivan, Inc., Washington, D. C.

Very Revealing—and . . .

. . . Surprising how a little huffing and puffing in the right spot can change the *business* scene for the better.

Advertising in the 1952 edition of the
REFRIGERATION AND AIR CONDITIONING DIRECTORY

will be huffing and puffing with a purpose! The DIRECTORY has been producing strong and steady trade winds for advertisers for 20 years.

Your DIRECTORY advertising will have pulling power exactly when buyers are looking for new franchise possibilities, new products, new sources of supply.

Yes, DIRECTORY advertising will bring back your investment many times over from "surprise" orders alone. And in *these* times, add the important factor of economical, long-term "impression" advertising.

Selected circulation nationwide and export puts your advertising message where it is seen and acted on promptly.

(Initial Distribution at All-Industry Show In November)

COPY CLOSES JULY 1, 1951

Reserve your space now. Just send in the self-addressed order form below.

Here is our . . .

ADVERTISING SPACE RESERVATION
for the 1952 Edition of the
REFRIGERATION and AIR CONDITIONING DIRECTORY

Reserve following space: ..... pages ..... ½ pages ..... ¼ pages ☐ color
Copy instructions or plate will reach you by (date) .....
We understand copy deadline is July 1, 1951. We need more information before placing order ☐

Rates: 1 page, $300; 2 pages, $550; ½ page, $190; ¼ page, $110; color, $100.

Mechanical Requirements: Page size: 4¾" x 7½"; ½ page: 4¾" wide x 3⅝" deep; ¼ page: 4¾" wide x 1¾" deep. Halftones: 110 screen.

COMPANY NAME .....
STREET .....
CITY ..... STATE .....
BY (INDIVIDUAL) .....

3-19-51

AIR CONDITIONING & REFRIGERATION NEWS, 450 W. FORT ST., DETROIT 26, MICH.

New Short Form for Estimating Warm Air Heating Installations Available from Assn.

CLEVELAND — The National Warm Air Heating and Air Conditioning Association is making available a new tentative short form for estimating costs of warm air heating installations.

Known as "Form 6—Job Estimate Form for Warm Air Heating Systems," this form has been developed by the Association's Installation Codes Committee, to meet the demands made by heating contractors for a simpler, shorter, and quicker method to figure jobs for estimating purposes.

"This new form meets all these requirements," stated W. D. Redrup, chairman of the board, Majestic Co., who led the development of Form 6. "Based directly on the accepted design and installation manuals developed by the association, Form 6 will aid the contractor or his salesmen to arrive at the heating requirements of a building easily and rapidly, yet without sacrifice to accuracy."

The first step in estimating the cost of installing a heating system is determining the size of furnace unit needed. This, of course, is dependent on the heat loss of the building. To determine the heat loss the association recommends the "crackage" method as the most accurate. This method is used with Form 6.

However, it is greatly simplified by figuring the heat loss of the home as a whole instead of figuring heating requirements room by room. The number of warm air outlets required is obtained by then dividing the total heat loss of the house by the average B.t.u. per hour delivery which the contractor wishes to use for each outlet. The factor 8,000 B.t.u. per hour has been used in Form 6, which represents the preference of most dealers.

Three tables are included in the form for use in determining the return air requirements for gravity and winter air conditioning system and for perimeter warm air heating.

Space is provided on page 1 of the new form for indicating all information pertaining to the job so that heating contractors can have an accurate record of items such as insulation, storm windows, and weatherstripping, which were considered as part of the construction plans when the heat loss of the house was figured.

Space is provided on page 4 for a complete tabulation of all costs figured in the estimate including special controls, carpentry, masonry, drayage, mileage, and even time necessary to properly clean up after the job is completed plus cost of free service plan.

The cost of Form 6 is $6.00 per 100 or a minimum quantity of 50 for $3.00 and can be obtained from the National Warm Air Heating and Air Conditioning Association, 145 Public Square, Cleveland 14, Ohio.

Westinghouse Gets Defense Contract To Produce Pylons

MANSFIELD, Ohio — A multi-million dollar defense production contract has been negotiated for the Westinghouse Electric Appliance division plant here, it was reported recently by J. H. Ashbaugh, vice president.

The contract calls for the production of jettison-type carrying devices for fuel tanks and armaments, called pylons. They will be used on F-84 Thunderjets made for the U. S. Air Force by Republic Aviation Corp., located at Farmingdale, L. I., New York.

Tooling and preparation for the contract, first to be negotiated for the local Westinghouse plant, is now underway. Main assembly of the pylon will be in warehouse space while other parts of the job will be handled by established departments in the plant.

The defense work contract will not affect civilian production at the plant, Ashbaugh said, even though several hundred workers will be assigned to pylon work. Deliveries of completed pylons to Republic is expected by sometime during the midsummer.

The pylon is a rack type device, Ashbaugh further explained, that is suspended below each wing of the Thunderjet fighter-bomber. It is used for carrying either a droppable fuel tank or armaments such as bombs, rockets, or napalm tanks.

Two pylons are used on the jet plane and each has an electrical and air control system for jettisoning either fuel tanks or armaments, and, if needed, the pylon itself.

During World War II, Westinghouse workers turned out sub-assemblies for Republic's P-47 fighter plane.

These parts included ailerons, elevators, and fuselage sections.

W. E. Slabaugh, Jr., who is in charge of aircraft contract procurements for the Westinghouse plant here, negotiated the pylon contract with Republic Aviation Corp.

Baltimore Aircoil Appoints 2 New Representatives

BALTIMORE—The Baltimore Aircoil Co., Inc., has announced the appointment of George F. Bertrand Co., Philadelphia, as exclusive representative for its evaporative condensers and cooling towers in eastern Pennsylvania, southern New Jersey, and the state of Delaware.

G. V. Sutfin Co., Cincinnati, is exclusive representative in southwestern Ohio, northeastern Kentucky, and southeastern part of the state of Indiana.

Straub Becomes Sales Mgr. Of Norge Heat Div.

DETROIT—Appointment of M. A. Straub as sales manager of the Norge Heat Div. of Borg-Warner Corp., was announced at the Detroit headquarters of the division by C. S. Davis, Jr., president.

M. A. Straub

Straub has been associated with Norge Heat Div., manufacturer of gas, oil, and coal domestic heating equipment for more than four years. He formerly was assistant sales manager. He was serving as advertising manager at the time of his promotion to sales manager.

Servel Names D. M. Mayne As Regional Sales Manager

DALLAS—Donald M. Mayne, formerly air conditioning zone supervisor for Servel, Inc., with headquarters in Dallas, has been promoted recently to regional sales manager.

He succeeds William K. Grube, who has been appointed assistant general sales manager of merchandising in the home office in Evansville, Ind.

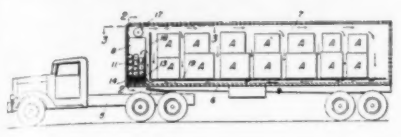
Mayne will continue to make his headquarters in Dallas, according to John K. Knighton, general sales manager of Servel.

WE WILL BUY!
SURPLUS REFRIGERATION UNITS
BELT-DRIVEN OR HERMETICS
1/6 H.P. to 10 H.P.
ANY QUANTITIES • MUST BE NEW
Write, Phone Or Call For
IMMEDIATE ACTION
TRACO Industrial Corp.
455 W. 19 St., N. Y. 19, WAtkins 4-4302
(Send for Traco's complete list of sensational bargains)

WE WILL BUY!
EXPANSION VALVES
SOLENOID VALVES, ALL TYPES
REF. FITTINGS and PARTS
ANY QUANTITIES • MUST BE NEW
Write, Phone Or Call For
IMMEDIATE ACTION
TRACO Industrial Corp.
455 W. 19 St., N. Y. 19, WAtkins 4-4302
(Send for Traco's complete list of sensational bargains)

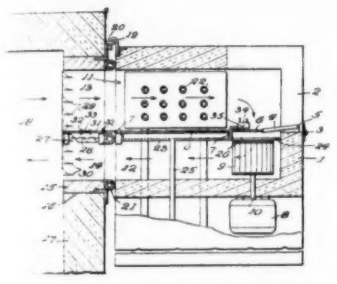
PATENTS *Week of October 17*

2,525,866. AIR CIRCULATION CONTROL FOR REFRIGERATOR TRUCKS. Harold E. Christman, San Jose, Calif. Application May 6, 1949, Serial No. 91,694. 5 Claims. (Cl. 62—130.)



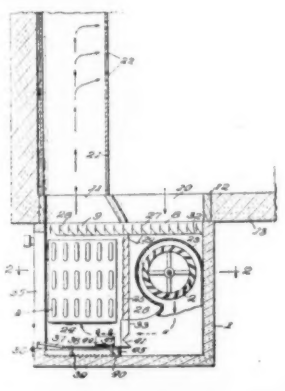
1. Air circulating control means for vehicles comprising a cooling compartment positioned in one end of the vehicle, a bulkhead spaced from the end of the vehicle and extending transversely of the side walls at a point in juxtaposition to said cooling compartment, said bulkhead extending from the floor of the vehicle substantially half-way of the vehicle's height, a second bulkhead spaced from said first-mentioned bulkhead, the lower end of said last-mentioned bulkhead being spaced from the floor of the vehicle and extending to a point above the cooling compartment and spaced from the top of the vehicle, and air-circulating means for exhausting air through said cooling compartment and into the storage area of said vehicle, to be circulated downwardly and beneath said last-mentioned bulkhead, thence upwardly between said bulkheads and through said cooling compartment.

2,525,868. REFRIGERATING SYSTEM HAVING A DETACHABLE UNIT. Sebastien S. Corhanidis, Athens, Greece. Application Nov. 17, 1948, Serial No. 60,441. 10 Claims. (Cl. 62—129.)



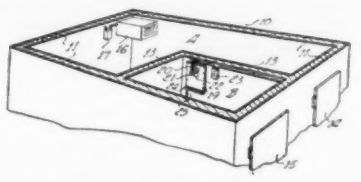
1. A refrigerating system for refrigerator or cooler chamber, comprising a frame for installation in an opening in the side wall of the refrigerator or cooler chamber, said frame having an outlet port and a return port for the air in said chamber, a closure means for each of said parts normally held resiliently in their closed position, a refrigerating unit adapted for hanging over said ports and means forming a part of said refrigerating unit and coacting with said closure means for automatically opening said closure means to provide refrigeration or cooling therethrough.

2,525,869. REFRIGERATING SYSTEM REMOVABLY MOUNTED. Sebastien S. Corhanidis, Athens, Greece. Application Nov. 17, 1948, Serial No. 60,442. 8 Claims. (Cl. 62—129.)



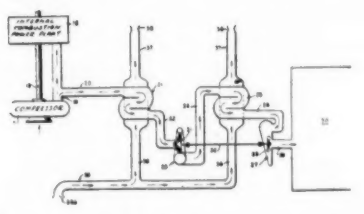
1. A refrigerating system for refrigerator chambers in railroad refrigerating cars and the like, comprising a frame having an inlet and an outlet port in the floor of the refrigerator chamber, external slide rails at its sides, a refrigerating unit having flange rails at the top of its ends and outlet and inlet ports in its top adapted for sealing register with the inlet and outlet ports respectively of said frame, when said unit is mounted in place by sliding its flange rails over the slide rails while swinging the door out of the way, and a door hinged along the outside of one of said rails for sealing said ports and having resilient means for automatically biasing it into closed position upon removal of said refrigerating unit.

2,526,063. TWO-TEMPERATURE WALK-IN COOLER. Jack J. Booth, Dallas, Tex., assignor to Zero Plate Co., Dallas, Tex. Application Aug. 25, 1947, Serial No. 770,352. 3 Claims. (Cl. 62—6.)



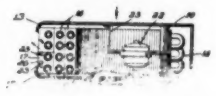
1. A two-temperature walk-in type refrigerator including a cabinet insulated against external temperature influences and having an interior wall dividing the same into two separate chambers and insulated to preclude transfer of heat from one chamber to the other, for the maintenance of different temperatures therein, said interior wall having an opening therein, a metal plate closing said opening, means for maintaining sub-freezing temperature in one of said chambers, said plate being effective to establish heat exchange between the latter chamber and the companion chamber to produce therein a temperature above freezing and means operable in response to temperature changes for periodically directing a stream of air against said plate in said companion chamber to dissipate moisture collecting therein to influence humidity conditions in said companion chamber.

2,526,103. CABIN COOLING SYSTEM FOR AIRCRAFT. Homer J. Wood, Los Angeles, Calif., assignor to The Garrett Corp., Los Angeles, Calif., a corporation of California. Application April 6, 1946, Serial No. 660,178. 9 Claims. (Cl. 62—136.)



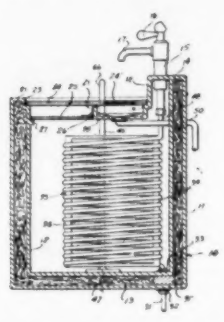
1. Mechanism for conditioning air to be supplied to the cabin of aircraft, the combination including: internal combustion power means including a compressor for supplying the power means with compressed air; a conduit for conveying compressed air from the pressure side of said compressor to said cabin; first and second coolers in said conduit through which said compressed air is passed for cooling same; means for supplying ambient air to said coolers for cooling the compressed air passing therethrough; an expansion turbine in said conduit on the discharge side of said second cooler for further cooling said air; and a second compressor in said conduit between said coolers, driven by said turbine whereby work extracted by said turbine is used to increase the pressure ratio of said compressed air at said turbine and thus obtain a lower discharge temperature of the air supplied to said cabin.

2,526,243. AIR LOUVER FOR HEATING OR COOLING UNITS. Henry J. Lange, Hammond, Ind., assignor to Betz Corp., Hammond, Ind., a corporation of Indiana. Application July 15, 1946, Serial No. 683,733. 3 Claims. (Cl. 257—137.)



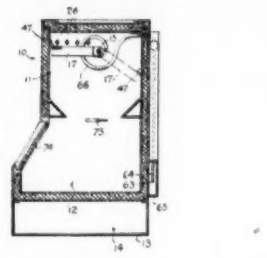
1. In a thermal exchange unit of half-round type including a housing comprising spaced upper and lower plates of semi-circular form, a bank of heat transfer tubes curved in semi-circular outline and disposed between said upper and lower plates, an air intake opening in one of said plates, a fan rotating approximately in said opening for drawing air into the space between said plates and forcing it outwardly between said tubes, an electric motor connected to drive said fan, and a plurality of sheet metal fins having apertures with laterally projecting flanges, said fins being assembled over said bank of tubes with said fins disposed substantially radially of the unit and said flanges spacing the adjacent fins; means for directing the flow of said air forced outwardly between said tubes and said fins comprising louver tabs of trapezoidal outline punched out of said fins leaving correspondingly shaped openings in said fins, said louver tabs projecting laterally from their respective fins and extending into the tab openings of the next adjacent fins, whereby to form a substantially continuous louver around the air discharge opening of said unit.

2,526,244. LIQUID COOLING DEVICE. Peter G. Larkin, New York, N. Y. Application Jan. 24, 1947, Serial No. 724,155. 2 Claims. (Cl. 62—142.)



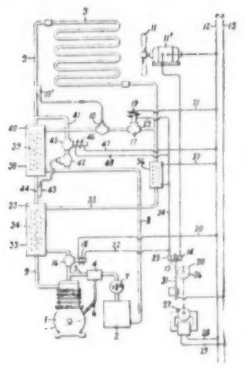
1. A cooling device comprising a receptacle open at its top and having an insulated bottom wall and insulated side walls for the reception of a cooling medium, at least two elongated coils vertically disposed in said receptacle and spaced from each other and from said side walls, said coils each having an inlet depending from its lower end for introducing a liquid to be cooled therein and an outlet extending from its upper end for withdrawing the cooled liquid therefrom, an agitator vertically disposed intermediate one of said coils and the adjacent side wall of said receptacle and normally resting upon the bottom of the latter, said agitator being mounted for vertical movement and operable externally of said receptacle to circulate said cooling medium, and a removable top for closing the open end of said receptacle.

2,526,262. AUTOMATIC ICE CUBE PRODUCING AND STORING APPARATUS. Clarence F. Munshower, Columbus, Ohio, assignor to Coltemp Corp., Columbus, Ohio, a corporation of Ohio. Application Sept. 21, 1948, Serial No. 50,263. 9 Claims. (Cl. 62—105.)



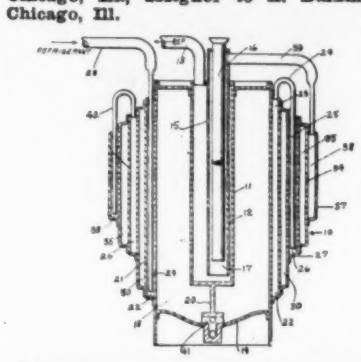
1. In apparatus for producing small blocks of ice, a tray formed to provide inner and outer shells disposed in spaced relation and forming a chamber therebetween, the inner shell having a plurality of block-freezing cavities, a coil for the passage of a refrigerant positioned in said chamber in heat-exchanging relation with the walls of said cavities, means for introducing water into the tray cavities when the tray occupies a substantially horizontal position, means for circulating a heated fluid within said tray when the same assumes an inverted ice block-releasing position, and motor-driving means for rocking said tray between an active upwardly facing freezing position and an inactive downwardly facing block-releasing position.

2,526,379. DEFROSTING ARRANGEMENT FOR REFRIGERATING SYSTEMS. Bernard D. Maseritz, Bloomfield, N. J., assignor to General Electric Co., a corporation of New York. Application March 9, 1949, Serial No. 80,528. 6 Claims. (Cl. 62—117.55.)



1. In combination with a refrigerating system including a compressor, a condenser and an evaporator connected in a closed refrigerant circuit, a hot gas line, means for selectively directing compressed refrigerant from the compressor through the condenser to the evaporator during normal operation and from the compressor through said hot gas line directly to the evaporator during defrosting operation, a suction line for returning refrigerant from said evaporator to said compressor, and a heat exchanger for transferring heat from said hot gas line to said suction line only during the defrosting operation.

2,526,526. MECHANICAL REFRIGERATOR WATER COOLER. Rudolph Yuza, Chicago, Ill., assignor to A. Dalkin Co., Chicago, Ill.



A cooling unit comprising a plurality of upright substantially cylindrical walls mounted one within the other in substantially concentric relation and spaced apart to provide a plurality of chambers providing two separate circulatory paths, conduit means connecting the chambers of one of said paths in communication with each other for the flow of fluid from the upper portions of the chambers providing said one of said paths to the lower portions thereof, said conduit means comprising conduits each formed substantially U-shaped to provide limb portions one of which being shorter than the other and extending into the upper portion of its respective chamber of said chambers of said one path and the other terminating short of the bottom of its respective chamber of said chambers of said one path, the bight portion of said conduit being exterior of the chambers of said one path and providing at a medial point between the ends thereof an air trap, and means connecting the chambers providing the other of said paths in communication with each other for the flow of fluid from the upper portion of the chambers providing said other path to the lower portions thereof.

(To Be Continued)

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REFRIGERATION V BELTS

ANY QUANTITIES • MUST BE NEW

Write, Phone Or Call For

IMMEDIATE ACTION

TRACO Industrial Corp.

455 W. 19 St., N. Y. 19, WAtkins 4-4302

(Send for Traco's complete list of sensational bargains)

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" $5.00 per insertion. Limit 50 words. 10¢ per word over 50.

RATES for all other classifications $7.50 per insertion. Limit 50 words. 15¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other addresses by actual word count. Please send payment with order.

POSITIONS WANTED

SIXTEEN YEARS experience with refrigeration and air conditioning, includes installation, maintenance and design job layouts. Electrical and wholesale selling. Desire position as field service engineer. Familiar with most leading makes of machines and companion equipment. Prefer southwest district. BOX 3693, Air Conditioning & Refrigeration News.

APPLICATION ENGINEER: Over 15 years experience in refrigeration application, sales, service, design, store layout, instruction and management. Desires permanent employment with national manufacturer. Willing to travel. Aggressive, practical, with merchandising ability. Will supply complete background resume and references upon request. BOX 3695, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

IF YOU are between age of 30 and 50, possess thorough knowledge installation of small heating and air conditioning installations, installation, service; have ability to think and initiative; good references and like to work, we are interested in considering you for permanent position 52 weeks per year. VANCE EQUIPMENT COMPANY, Drawer 567, Dothan, Ala.

ENGINEER—MIDWEST manufacturer of a variety of contract products and hermetic refrigeration systems has position available for product development and laboratory assistant. This is an excellent opportunity in various phases of engineering work. Write giving full qualifications and background. BOX 3690, Air Conditioning & Refrigeration News.

COMMERCIAL REFRIGERATION distributor in the Carolina's wants service and installation supervisor. Must draft food store plans and know fixtures for light manufacturing. State salary expected. References held confidential. Apply BOX 3694, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

REFRIGERATOR DOORS. 3'6" by 6'6" double batten auto close doors complete with removable track heads for a 7'2" track. 1½" corkboard insulation. 16 gauge metal clad. Brand new. $95.00 each. Freight prepaid in U.S. Door height will be altered for anything up to an 11 ft. 2 in. track for $15.00 additional. BIMEL CO., Cincinnati, Ohio.

FULL LINE of York refrig. and air cond. machinery, ammonia and "Freon" up to 40 H.P. Also valves, fittings, condensers, coils, tanks very reasonable. Drop us a line before spring and let us know what you need. JOHN TAFFE, 832 N. Holly St., Philadelphia 4, Pa.

EQUIPMENT WANTED

WANTED URGENTLY, copper tubing for air conditioning installations, sizes ⅞" to 3⅝" O.D. Will consider any quantity. Address offers to Electrica-Comercial, Inc., Box 3751, San Juan, Puerto Rico.

BUSINESS OPPORTUNITIES

FOR SALE. Going business for 15 years, selling commercial refrigeration, also store fixtures, such as, grocery, meat market, restaurant, tavern, drug, clubs, cafeteria, schools, and churches. Largest store of its kind within 70 to 100 miles of here. My reason is to settle estate. CLARKS FIXTURE CO., Bessie L. Clark, Admr., 701-703 W. Madison St., Danville, Illinois.

FOR SALE—Ice and frozen food locker plant, located in eastern Ohio. Especially recommended for someone wishing to establish a refrigeration service business in surrounding territory. Price reasonable. For further details write ARCH JONES, Redfield Village 6A-2, Metuchen, New Jersey.

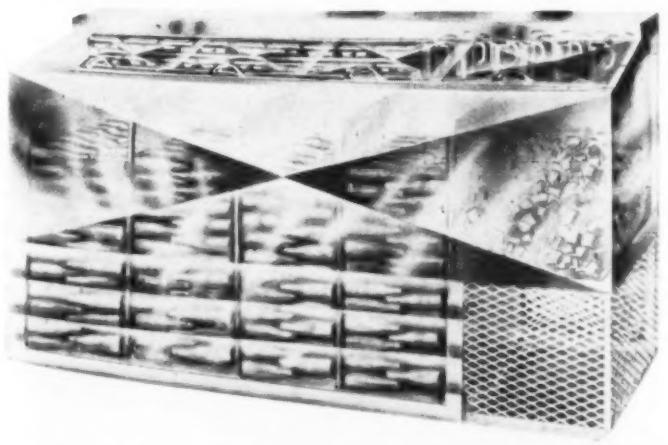
FOR SALE: Commercial refrigerator business established 1916, reason poor health. Territory six counties about nine hundred thousand population, including four of the best manufacturing cities in northeastern Ohio. Present inventory thirteen thousand. Manufacturer consigns thirty days to allow time for settlement of sold equipment. BOX 3692, Air Conditioning & Refrigeration News.

SCHOOLS

VETERANS ATTENTION: Enroll in the school of your choice before the July 25 deadline. For men engaged in or who would like to become engaged in any phase of air conditioning, refrigeration, heating, ventilating, heat pump engineering or sheet metal work, classes before the July 25 date start April 24, June 5 and July 17. Write for catalog. DETROIT AIR CONDITIONING INSTITUTE, 4258 Woodward Avenue, Detroit 1, Michigan.

MISCELLANEOUS

NORGE SEALED units remanufactured and exchanged. Immediate delivery from stock, 1 year warranty. Write for prices and shipping instructions. Genuine Norge terminals for Norge sealed units. Complete set of three, $1.45 plus postage. MODERN REFRIGERATION CO., INC., 12541 E. McNichols Road, Detroit 5, Michigan.



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2 feet long glass chilling shelf.
Cools 480 12 oz. bottles.
6 ft. long, 27" W., 38" H. Wt. 700 lbs.

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3-19-51

NPA, Mfrs.--

(Concluded from Page 1, Column 2)

effect on July 1. Also on the agenda will be field reports by the manufacturers on how the agency's orders are affecting their operations. Discussion will look toward a solution to their difficulties.

Washington sources indicate that the NPA has not yet definitely decided just how the controlled material plan (known as CMP) will be administered.

The question seems to be whether to set aside the steel, copper, and aluminum needed for defense uses and then set over-all percentage quotas on how much civilian industry can use—as is being done now—or to specifically allocate the entire supply of these metals to both defense and civilian industries.

The former tack is said to be favored by the NPA because it would be the easiest to administer. However, manufacturers are said to prefer the second method, because it gives them greater assurance of actually getting the metals they are allocated.

Under the percentage quota system, manufacturers know how much they are entitled to, but they are left to their own devices in actually getting the allotted quantity.

Government officials like the percentage quota, because it relieves them of the necessity of deciding just how much steel, copper, and aluminum each industry is going to receive and of administering and enforcing their decisions afterwards.

Buffalo Conference--

(Concluded from Page 1, Column 2)

less. Prizes will be awarded at the Saturday night banquet and entertainment.

The Conference and Exhibit is the eighth in a series sponsored jointly by the Refrigeration Service Engineers Society and the Refrigeration Equipment Manufacturers Association.

It is strictly educational. Manufacturer's exhibits—about 70—will be manned by factory experts who will explain the displays and the jobs that their products are designed to do. They will also answer specific problems posed by booth visitors.

Both the conference and the exhibit will be staged on the 17th floor of the Hotel Statler. The conference will feature the usual question and answer periods, and a number of talks of particular interest to servicemen.

The exhibits will be open from 1 to 5 and 7 to 10 p.m. on Friday, April 6; from 10 a.m. to 5 p.m. on Saturday; and from noon to 4 p.m. on Sunday.

All members of the industry—manufacturers, distributors, wholesalers, contractors, and servicemen—are welcome to attend the affair. Registration charge is $1.

Entertainment will be provided for the ladies.

Host association are, in addition to Rema and RSES, the Empire State Association (New York), the Interprovincial Association (Canada), and the Niagara Frontier chapter (Buffalo) of the RSES.

Urges Use of DO-97's--

(Concluded from Page 1, Column 3)

"NPA Regulation 4 authorizes any business (grocer—druggist—butcher, etc.) to certify an order to cover its maintenance, repair, and operating supply requirements. The customer merely marks his order 'DO-97' and signs his name.

"If we are to continue the manufacture of the equipment which you distribute, these ratings must be extended to us. Insist that orders from your servicemen are so certified by their customers, and that this certification be extended to us in every instance possible."

The letter points out that the DO-97 rating cannot be applied to the procurement of repair parts for the service of household units.

Drayer-Hanson Converting Plant To Defense Work

LOS ANGELES — Drayer-Hanson, Inc., is converting its plant to defense work as material shortages cut into production of its regular refrigeration and air conditioning products, indicates George J. Morton, president.

The company has approximately $2,000,000 in defense work, including a $1,500,000 contract for Air Force drop tanks just concluded, he said.

Morton expects that a slight profit for the fiscal year ending April 30 will be chalked up by the firm, which completed its reorganization on Dec. 15 with the end of its public stock offering.

Court Upholds Virginia Ban on Below-Cost Sales In Drug Chain Case

RICHMOND, Va. — Constitutionality of Virginia's unfair trade practices act, outlawing below cost retail sales, was upheld by Circuit Court Judge Harold N. Snead.

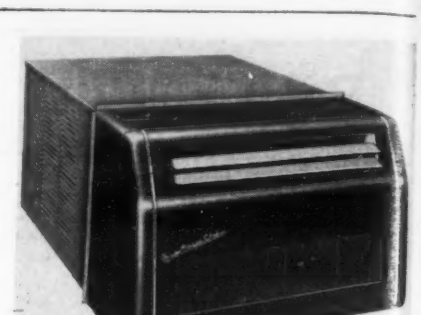
Ruling in a case brought by the state against a drug chain charged with selling cigarettes below cost, Judge Snead held that the unfair sales act is a "valid exercise" of police power by the state and its provisions have a "reasonable relation to a proper legislative purpose and are not arbitrary or discriminatory."

The court said that the act does not violate the state constitution or the Fourteenth Amendment of the Federal Constitution.

State Attorney General J. Lindsay Almond, Jr. instituted the case against the Standard Drug Co., Inc., operator of stores in Richmond, Petersburg, Roanoke, Charlottesville, and Newport News.

Although overruling the company's attack on the law's constitutionality, Judge Snead turned down the state's request for an injunction pending a hearing in the case because the defendants denied violating the act.

The attorney general brought the complaint at the request of the Virginia Pharmaceutical Association, Inc., the Virginia Independent Food Dealers Association, Inc., as well as the Virginia Restaurant Association, Inc.



Magic Chef ¾-ton room air conditioner.

American Stove Cooler--

(Concluded from Page 1, Column 4)

The company feels that the room conditioner is a natural addition to its products line since the sales season for room conditioners tends to supplement range and heater sales.

Styled in rich walnut finish, the air conditioner cools, dehumidifies, circulates, ventilates, and filters, "completely conditioning up to 400 sq. ft.," the company said.

"Independent laboratory reports show Magic Chef actually delivers full rated capacity of 9,000 B.t.u. per hour," it was stated.

The unit can be installed in any double-hung window (27 in. wide or wider).

MORE INFORMATION?
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Appliances and Parts Wholesalers January Sales Soar over Same Period In 1950

WASHINGTON, D. C. — January sales of appliance and specialty wholesalers soared 115% above the year-ago level, according to the Bureau of the Census.

This was the largest increase over January 1950 sales of all wholesale trades, with every trade but one reporting moderate to substantial gains. Compared with December 1950, appliance and specialty wholesalers' sales in January were up 18%.

Sales of refrigeration equipment and parts wholesalers in the same month rose 64% over the year-ago figure and 22% over that for the preceding month.

Appliance and specialty wholesalers' inventories at the end of January increased 63% compared with January 1950 but declined 3% from December. Those of refrigeration equipment wholesalers were 22% higher than at the end of January 1950 and 1% above December.

January sales of all wholesalers gained 4% over the previous month, an increase contrary to the normal seasonal trend, the Census Bureau said. Compared with a year ago, however, January sales indicated a more substantial increase of 53%.

End-of-January wholesalers' inventories were up 6% from the Dec. 31, 1950, stock level and were 26% above the dollar value of stocks on hand Jan. 31 of last year.

January 1951 Inventory by Geographic Division

Kind of Business and Geographic Division	Per Cent Change Jan. 1951 from Jan. 1950	Per Cent Change Jan. 1951 from Dec. 1950	January 1951 Panel No. of Firms Reporting	January 1951 Panel Reported Dollar Values (add 000)
Appliances and specialties wholesalers	+63	— 3	85	27,665
New England	+42	+ 2	7	1,522
Middle Atlantic	+128	—10	15	8,314
East North Central	+75	—10	12	3,253
West North Central	+58	— 3	14	4,945
South Atlantic	+14	+ 5	15	3,230
South Central	+39	+ 5	9	2,366
Mountain	— 8	— 3	5	891
Pacific	+75	+ 4	8	3,144
Refrigeration equipment, parts (com'l)	+22	+ 1	19	2,439
Middle Atlantic	*	*	*	*
East North Central	+ 9	— 1	5	575
South Atlantic	+21	0	5	664
Pacific	+28	— 9	4	381

*Insufficient data to show separately.

January 1951 Sales by Geographic Division

Kind of Business and Geographic Division	Per Cent Change Jan. 1951 from Jan. 1950	Per Cent Change Jan. 1951 from Dec. 1950	January 1951 Panel No. of Firms Reporting	January 1951 Panel Reported Dollar Values (add 000)
Appliances and specialties wholesalers	+115	+18	105	38,677
New England	+ 96	+29	9	2,827
Middle Atlantic	+152	+29	23	16,425
East North Central	+ 70	+13	16	4,716
West North Central	+148	+ 8	16	4,471
South Atlantic	+ 83	+14	16	3,723
South Central	+ 69	+ 3	10	1,826
Mountain	+ 99	—13	6	1,143
Pacific	+100	+ 8	9	3,546
Refrigeration equipment, parts (com'l)	+ 64	+22	25	1,279
Middle Atlantic	+ 49	+39	5	285
East North Central	+ 16	+16	6	174
South Atlantic	+ 50	+25	5	266
Pacific	+123	+37	4	194

DISTRICT SALES SUPERVISOR WANTED

Nationally known manufacturer of commercial refrigerators has unusually attractive proposition for aggressive representative for prosperous Michigan-Indiana-Ohio territory. Earnings commensurate with experience and ability to develop territory for which the groundwork is already laid. Our own personnel know about this advertisement. Please furnish details experience, present connection, etc., in first letter.

Address Box 3685, Air Conditioning & Refrigeration News

Every wholesaler and his salesmen should know how

EXTRUSION-PIERCING *affects refrigeration tube*

When you sell your customer Wolverine copper tubing, you provide him with complete satisfaction. That's because every step in the manufacture of Wolverine tubing is quality controlled.

For example, trained workmen in the extrusion department are careful to see that the extrusion mandrel enters the center of the securely-held, pre-heated, copper billet. The base tube is literally squeezed out between the mandrel and die by a pressure of 2400 tons. It is cut from the resulting shim and quenched.

Each base tube—20 feet long and two inches in diameter—is precisely the same. Wall thicknesses are controlled all way 'round. Important to subsequent operations, the tube is sound and without seams. Those are qualities your customer wants.

Ask for a copy of our flow chart. WOLVERINE TUBE DIVISION, Calumet & Hecla Consolidated Copper Company, Incorporated, *Manufacturers of seamless, non-ferrous tubing*, 1413 CENTRAL AVENUE, DETROIT 9, MICHIGAN

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Export Department, 13 E. 40th St., New York 16, N. Y.